Environmental Resource Group

1038 Redwood Hwy, Suite 1
Mill Valley, CA 94941
Phone (415) 381-6574
Fax (415) 381-6320

February 24, 2006

John Jang, Water Resources Control Engineer
San Francisco Bay Region
California Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, California 94612

RE: Closure Report - July 2005
Alfa Gas Station
5 Ashford Avenue, Mill Valley, California

Dear Mr. Jang:

On behalf of Alfa Investments, Inc., Environmental Resource Group, Inc. is uploading the Closure Report of July 2005 for the Alfa Gas Station at 5 Ashford Avenue in Mill Valley, Marin County, California.

Please call me at 650-234-1030 if you have any questions.

Sincerely Yours,
ENVIRONMENTAL RESOURCE GROUP

Paul Studemeister
California Professional Geologist, PG 4635
California Certified Engineering Geologist, CEG 1746

Attachment

CLOSURE REPORT
ALFA GAS STATION
5 ASHFORD AVENUE
MILL VALLEY, CALIFORNIA

July 2005

Environmental Resource Group, Inc.

1038 Redwood Hwy., Suite 1
Mill Valley, California 94941
(415) 381-6574

CLOSURE REPORT
ALFA GAS STATION
5 ASHFORD AVENUE
MILL VALLEY, CALIFORNIA

July 2005

Prepared for:

Alfa Investments, Inc.

Mr. Farook Hansia
570 Redwood Hwy
Mill Valley, CA 94941

Prepared by:

Environmental Resource Group, Inc.

1038 Redwood Hwy., Suite 1
Mill Valley, California 94941
(415) 381-6574

Ben Wells
Principal Geologist

Steven I. Michelson, R.G.
California Registered Geologist (5165)

TABLE OF CONTENTS

SUBJECT **PAGE**

TABLE OF CONTENTS (CONTINUATION)

FIGURES

TABLES

APPENDIX

1. INTRODUCTION

Environmental Resource Group, Inc. (ERG) has prepared this *Closure Report* (Report), on behalf of Alfa Investments, Inc. (Alfa Investments) for the facility located at 5 Ashford Avenue in Mill Valley, California (Site; Plate 1). This Report is submitted pursuant to the request from the Regional Water Quality Control Board (RWQCB). This request was based on results of previous investigations and several quarters of routine ground water quality monitoring.

In summary, seven underground storage tanks (USTs) were removed from the Site in 1999. Petroleum hydrocarbons have been detected in soil and groundwater at the Site and concentrations have attenuated significantly since the removal of the USTs. Groundwater monitoring began at the Site in 1990, and has been performed routinely since the fourth quarter in 2000. There are currently seven groundwater monitoring wells at the Site.

2. BACKGROUND

2.1 SITE DESCRIPTION

The triangular shaped Site is an operating Alfa Gas Service Station located west of the intersection of East Blithedale Avenue and Ashford Avenue. The Site and areas to the north, east, and west are generally flat. A steep hill lies south of the Site across East Blithedale Avenue. Residential areas are north and west of the Site.

The Site is bordered by Ashford Avenue on the north side, East Blithedale Avenue on the south side, and by a tidal creek to the west, which flows south towards Sausalito Canal. The creek forming the western edge of the Site is incised approximately 6 feet. A storm drainage ditch discharges into the tidal creek near the southwest corner of the Site.

The Site has been utilized as a gasoline and automobile service station since the 1940s with vehicle repair ceasing in the 1970s. Past operators include Chevron Oil Company, Redwood Oil Company and C&S Oil Company. There are currently three operating USTs at the Site, one 5,000-gallon diesel UST and two 12,000-gallon gasoline USTs.

2.2 SITE GEOLOGY

The site is underlain by estuarine deposits that consist primarily of sandy to silty gray to olive clays, which is typical of Bay Mud. The Bay Mud consists of clay and silty clay with minor lenses of silt and silty fine sand. Groundwater appears to be concentrated in the silt and silty fine sand lenses. Bedrock beneath the Site is comprised of marine siltstone and sandstone of the Merced Formation (USGS, 1997). Depth to bedrock at the site is undetermined. Appendix A contains copies of boring logs and monitor well logs.

2.3 GROUNDWATER GRADIENT

In borings advanced at the Site, groundwater was initially evident at approximately 10 feet below ground surface (bgs). However, the static depth to groundwater measured in monitoring wells completed at the Site has been generally at 3 feet to 5 feet bgs (Table 1). Shallow groundwater was observed in the excavation performed to install the USTs (ERG, 2000). Based on the relative groundwater elevations, potentiometric groundwater surface patterns for 2004 were constructed using the depth to groundwater data recorded on March 24 (rainy season), June 14 (start of dry season), and September 24 (end of dry season) and these patterns are presented in Plates 2, 3 and 4, respectively. The potentiometric surfaces during the year generally indicate a trough striking west-southwest and towards the tidal creek with a gradient averaging approximately 0.02 feet per foot.

2.4 TIDAL INFLUENCE

The Site lies adjacent to a tidally influenced creek. On September 3, 2001, depth to groundwater was measured during spring higher high-tide and spring lower low-tide conditions to evaluate if groundwater elevation and gradient direction is significantly affected by tides.

During high tide, approximately 0.94 feet of water was observed in the creek and during low tide, no water was observed in the creek bed. The groundwater elevations at high and low tide ranged from 0.01 feet to 0.09 feet. Based on the data, groundwater elevations do not appear to be significantly affected by tidal variations in creek flow.

3. ENVIRONMENTAL CONDITIONS

Investigations and monitoring of soil and groundwater quality began at the Site in 1990 and continued through to 2004. In 1999, seven USTs were excavated and removed. In 2000, the three existing USTs were installed and are currently active.

Details of historical investigations and remedial actions, including the removal of the USTs are presented in technical reports prepared by Environmental Geology Services (EGS, 06/14/99), EnviroNet Consulting, Inc. (ECI, 04/01/98), Sierra Environmental Services (SES, 09/28/90; 04/03/91).

In 2001, ERG resumed environmental investigation and monitoring activities at the Site on behalf of the Alfa Investments (ERG, 09/2001, 02/2003, 05/2004 and 01/2005). This section summarizes the known environmental conditions currently existing at the Site.

3.1 APPLICABLE REGULATORY CRITERIA

Site cleanup goals must be protective of both human health and the environment. The determination of site cleanup goals includes the potential impact to groundwater from chemicals in soil, potential human health risks posed by chemicals in soil and groundwater, and protection of the beneficial uses of the water resource. In lieu of site-specific risk evaluations, regulatory guidance and/or screening levels can be used to identify conditions of potential concern. The California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB, 02/2005) Environmental Screening Levels (ESLs) are used herein to evaluate the concentrations of chemicals recently measured in groundwater at the Site.

The Basin Plan (RWQCB, 1995) and Board Resolution No. 88-63 Sources of Drinking Water, state that groundwater with electrical conductivity above 5,000 µmhos/cm may not be suitable to supply a public water system. The electrical conductivity of groundwater in groundwater monitoring wells at the Site is typically above 5,000 µmhos/cm and has exceeded 20,000 µmhos/cm in some monitoring wells. Based on the electrical conductivity and other features, the shallow groundwater at the Site may not be suitable as a drinking water resource. The area is served by Marin Municipal Water District.

Accordingly, ESLs for non-potable groundwater resources in a commercial/industrial scenario are used herein to screen the environmental conditions at the Site.

3.2 REMOVAL OF THE USTS

In 1999, seven underground storage tanks (USTs) were removed from the Site. These USTs consisted of two 8,000-gallon gasoline tanks, three 10,000-gallon gasoline tanks, one 10,000-gallon diesel tank, and one 1,000-gallon waste oil tank. The approximate locations of the former USTs are shown on Plate 4.

Results of samples collected during the UST removals are presented in EGS (06/14/99). Based on the results of the samples collected during the removal of the USTs, the RWQCB required additional investigations and monitoring of groundwater quality and an investigation of sediment in the adjacent creek. In response to the RWQCB requirements, work plans were prepared and implemented upon approval from the RWQCB.

3.3 TIDAL CREEK AND DRAINAGE DITCH INVESTIGATION

Sediment samples were collected along the tidal creek and drainage ditch in 2001 and 2002 (Plate 5). The samples were collected to evaluate potential impacts by lead and petroleum hydrocarbons in the bed and banks of the creek and drainage ditch adjacent to the Site (ERG, 09/2001, 02/2003).

3.3.1 Tidal Creek and Drainage Ditch Soil Sampling

A total of 10 soil samples were collected from the tidal creek and drainage ditch from 2 feet and 4 feet bgs in April 2001 from locations C-1 through C-5. Based on the results, 19 surface samples were collected in November 2002 from the banks and bed of the creek bank at locations C-1, C-2, C-4, C-7 and C-8, and from the banks and bed of the drainage ditch at locations C-3 and C-6. This second effort included 5 samples collected across each of 3 transects (Plate 5).

Transect C-3 crossed the drainage ditch from the Site to Blithedale Avenue below the box culvert. Transect C-7 crossed the tidal creek west of the Site. Transect C-6 was located above the drainage ditch culvert. The sample collected at C-8 represents upstream and background conditions for the creek. Samples subscripted C were collected from the bed of the tidal creek or drainage ditch. Samples subscripted A, B, D and E were collected from the banks of the tidal creek and drainage ditch (Plate 5).

Overall, 29 soil or sediment samples were collected from the tidal creek and drainage ditch adjacent to the Site, the samples were taken from between ground surface and 4 feet bgs. Sampling locations are presented in Plate 5. The samples were analyzed for total lead using EPA Method 6010; total petroleum hydrocarbons as gasoline (TPHg), as diesel (TPHd) and as motor oil (TPHmo) using EPA Method 8015M; benzene, toluene, ethylbenzene and xylenes

(BTEX) using EPA Method 8020; and methyl tert butyl ether (MTBE) using EPA Method 8260M (ERG, 09/2001 and 02/2003).

3.3.2 Soil and Sediment Analytical Results

The sample analytical results are presented in Table 2. Each of the 29 soil samples revealed measurable concentrations of lead above the detection limit. Concentrations ranged from 5.1 milligrams per kilogram (mg/kg) to 1,200 mg/kg. The highest lead concentrations were measured in samples collected along Transect C-6 above the drainage ditch culvert (Table 2).

Of the 29 samples, a total of 15 samples revealed measurable concentrations of TPHmo, ranging up to 580 mg/kg. As with lead, the highest concentrations of TPHmo were measured along Transect C-6 (Table 2).

Of the 29 samples, a total of 16 samples revealed measurable concentrations of TPHd, ranging up to 130 mg/kg. While all samples collected along the Transect C-6 revealed measured concentrations of TPHd, the highest concentration was revealed in the sample collected from 2 feet bgs beneath the drainage ditch bed at Location C-3-2' (Table 2).

The samples did not reveal measurable concentrations of TPHg and BTEX above the reporting limit. MTBE was detected in 2 samples at 2.6 and 3.0 mg/kg, respectively (Table 2).

Plate 5 shows the soil/sediment sampling locations and analytical results for lead and TPHmo for surface samples only. Table 2 summarizes the analytical results for surface and subsurface samples. Included on Table 2 are the RWQCB (May 2000) sediment screening criteria used to screen for lead in soil/sediment samples. The RWQCB (May 2000) does not publish sediment screening criteria for mixtures of petroleum hydrocarbons, such as TPHd or TPHmo.

3.3.3 Significance of Results

The set of soil samples collected by ERG in April 2001 and November 2002 revealed measurable concentrations of total petroleum hydrocarbons as diesel (TPHd), total petroleum hydrocarbons as motor oil (TPHmo), methyl tertiary butyl ether (MTBE), and lead. Based on the findings, ESLs, and sediment screening criteria, the sediment quality in the creek bed and banks appears to pose a low to insignificant level of risk to potential aquatic and human receptors in a commercial land use setting.

There are several potential sources of lead to the creek sediments, including: leaded gas formerly dispensed at the service station, wheel weight dust, elemental (background) lead, and lead paint dust. There are several potential sources of TPHmo to shallow soil in the area, including automobile leakage and storm water run-off.

3.3.3.1 Lead in Bed Sediments

Of the samples collected from the tidal creek bed surface (C-1, C-2, C-4, C-7C and C-8), none exceeded the lead sediment screening criterion of 43.2 mg/kg for surface wetland material. Overall, the concentrations of lead in the creek bed surface and subsurface samples ranged from 5.1 mg/kg to 41 mg/kg, similar to the background at Location C-8 with 13 mg/kg of lead. The 95 percent upper confidence level (UCL) of lead in the tidal creek bed samples is 26 mg/kg, below the sediment screening criterion.

Of the 24 samples collected from the tidal creek and drainage ditch area (excluding Transect C-6 above the drainage ditch culvert), only one samples collected from 2 feet bgs at Location C-3C with 650 mg/kg lead revealed lead above both the sediment screening criterion of 43.2 mg/kg and the probable effects screening criterion of 218 mg/kg. This depth is near the "maximum depth of biological activity in wetlands that is conservatively estimated at three feet…" (RWQCB, May 2000).

The average lead concentration for the set of 24 soil samples from the tidal creek and drainage ditch area (excluding Transect C-6 above the drainage ditch culvert) is 62 mg/kg and the 95 UCL is 117 mg/kg, both below the probable effects screening criterion of 218 mg/kg and below the residential ESL of 150 mg/kg and commercial/industrial ESL of 750 mg/kg.

3.3.3.2 Lead in Creek Bank Sediments

The samples collected from the tidal creek banks, along Transect C-7, revealed lead from 24 mg/kg to 140 mg/kg. Only the concentration of 140 mg/kg, measured at Location C-7-E, near the top of the creek bank, revealed lead above the sediment screening criterion of 43.2 mg/kg. However, this concentration is below the probable effects screening criterion of 218 mg/kg.

3.3.3.3 Lead in Drainage Ditch Bank Sediments

The surface samples collected from the drainage ditch bank, along Transect C-3, revealed lead from 25 mg/kg to 120 mg/kg. Two of the four surface bank samples revealed lead above the sediment screening criterion of 43.2 mg/kg, but none were above the probable effects screening criterion of 218 mg/kg.

3.3.3.4 Lead in Soil Above Drainage Ditch Culvert

Transect C-6 was located directly above the drainage ditch culvert and extended from the Site to Blithedale Avenue. Of these samples, only the surface soil sample C-6E with 1,200 mg/kg of lead, yielded lead above the ESL of 750 mg/kg. Four of the five samples revealed lead below the ESL of 750 mg/kg for a commercial/industrial land use.

While the 95 percent UCL of lead along Transect C-6 is 1,090 mg/kg. The 95 percent UCL of all the soil and sediment samples (29 samples) collected from the tidal creek and drainage ditch including Transect C-6 is 264 mg/kg, below the commercial/industrial ESL of 750 mg/kg. Furthermore, the Site consists of approximately 11,000 square feet of which approximately 93 percent is paved and about 7 percent is unpaved, the later predominantly in the area of Transect C-6. This relatively small area of elevated lead concentrations is away from Site operations and is likely to constitute minimal exposure risk to human receptors. Lastly, the relatively elevated concentrations of lead measured along Transect C-6 may be largely attributable to runoff or pollution from automobiles along the adjacent Blithedale Avenue.

Sediment quality at Locations C-4 and C-5 in the creek, which are downstream of the confluence with the drainage ditch, did not reveal lead above the sediment screening criterion of 43.2 mg/kg. The lack of significant impact from lead above the drainage ditch to the creek is further illustrated in Plate 6, which graphically depicts concentrations of lead and TPHmo from upstream to downstream. Based on these findings, conditions along and above the drainage ditch are not significantly impacting creek sediments.

3.3.3.5 Petroleum Hydrocarbons in Sediments

Twenty-two of the 29 samples revealed measurable concentrations of petroleum hydrocarbons, namely up to 580 mg/kg TPHmo and 130 mg/kg TPHd. All concentrations are below the commercial/industrial ESLs of 1,000 mg/kg for TPHmo and 500 mg/kg for TPHd.

3.4 GRAB GROUNDWATER INVESTIGATION

In 2001, seven grab groundwater samples were collected from seven borings and were analyzed for TPHg and BTEX by EPA Methods 8015/8020; TPHd by EPA Method 8015M; and fuel oxygenates by EPA Method 8260B. The fuel oxygenates were methyl tert butyl ether (MTBE), tert butyl alcohol (TBA), di isopropyl ether (DIPE), ethyl tert butyl ether (ETBE) and tert amyl methyl ether (TAME). Table 3 summarizes the analytical results. The data were used to assess the extent of petroleum hydrocarbons in groundwater and to proposed locations for permanent monitoring wells.

All grab groundwater samples revealed measurable concentrations of petroleum hydrocarbons. Benzene, TBA and ETBE were not measured above the reporting limits. Five samples revealed TPHg, two samples revealed toluene, ethylbenzene, and xylenes, and all seven samples revealed MTBE. The highest concentrations of gasoline range compounds were measured in the groundwater sample collected from HP-3 with 2,100 µg/L TPHg, 0.67 µg/L toluene, 0.92 µg/L ethylbenzene, 4.1 µg/L xylenes, 2,100 µg/L MTBE and 130 µg/L TAME.

The grab groundwater sample collected from HP-7, which was located adjacent to the former USTs, yielded the single detection of TPHd at 1,200 µg/L. The groundwater sample collected from HP-5 located downgradient from the former USTs yielded the single detection of DIPE at 5.8 µg/L.

Based on these results, concentrations of petroleum hydrocarbons above ESLs for groundwater that is not considered a potential drinking water resource appeared limited to the vicinity of HP-3, HP-7 and MW-5.

3.5 GROUNDWATER QUALITY MONITORING

Four groundwater monitor wells (MW-1 through MW-4) were installed in September 1990 and five more monitoring wells (MW-5 through MW-9) in February 1991. However, monitoring wells MW-1 through MW-4 and MW-7 were destroyed in 1999 during the USTs removal and excavation. Monitoring Wells MW-1R, MW-3R and MW-7R were installed in November 2002 in the vicinity of monitoring wells MW-1, MW-3 and MW-7.

Routine quarterly groundwater monitoring began in fourth quarter of 2000 and continued through the third quarter 2004. The samples were analyzed for total purgeable petroleum hydrocarbons as gasoline (TPHg), as diesel (TPHd) and as motor oil (TPHmo) by EPA Methods 8015M; benzene, toluene, ethylbenzene and xylenes (BTEX) by EPA Method 8020; gasoline oxygenates including MTBE by EPA Method 8260M/B. The analytical results are presented in Table 4. Table 5 presents the monitoring results for field and natural attenuation parameters.

3.5.1 Petroleum Hydrocarbons

The most recently collected groundwater samples, in the third quarter 2004, did not reveal measurable concentrations of TPHd. TPHg was measured in MW-1R at 110 µg/L, in MW-3R at 65 µg/L and in MW-5 at 80 µg/L. The laboratory reported that the TPHg consisted mainly of MTBE. MTBE was measured in MW-1R at 110 µg/L, in MW-3 at 65 µg/L, in MW-5 at 80 µg/L, in MW-6 at 5.4 µg/L, and in MW-7R at 15 µg/L.

The TPHg concentrations measured in the third quarter 2004 were below the ESL of 500 µg/L for non-potable groundwater resources. The MTBE concentrations were also below the corresponding ESL of 1,800 µg/L for non-potable groundwater resources. The interpreted distribution of TPHg for September 2004 is depicted on Plate 7.

Benzene was measured in a single well at 1.1 µg/L, below the ESL of 46 µg/L for non-potable groundwater resources. The remaining petroleum hydrocarbons toluene, ethylbenzene and xylenes, and TPHd, were not measured above reporting limits, consistent recent trends.

Historical trends of TPHg and benzene concentrations over time in monitoring wells MW-1 and MW-5 are depicted on Plate 8. The data show a decline in concentrations over time independent of groundwater elevation. This pattern is consistent with both limited residual petroleum hydrocarbons in the soil and natural attenuation processes in the subsurface environment.

3.5.2 Natural Attenuation

Dissolved oxygen concentrations were routinely measured in each of the monitoring wells (Table 5). Following removal of a petroleum hydrocarbon source, passive natural microbially mediated degradation, or bioremediation, of petroleum hydrocarbons usually acts to advance site cleanup passively (LLNL, 1995). The microbes will preferentially perform aerobic respiration to metabolize petroleum hydrocarbons. Aerobic respiration consumes oxygen (O_2) as the electron acceptor and produces carbon dioxide (CO_2). Based on these processes, bioremediation processes would generally decrease concentrations of oxygen in groundwater. As dissolved oxygen is depleted and the system becomes anaerobic, the following electron acceptors and processes are preferentially used by the microbes: denitrification utilizes nitrate (NO_3^{-1}) and produces nitrite (NO_2) and carbon dioxide, iron reduction utilizes ferric iron (Fe^{+3}) and produces ferrous iron (Fe^{+2}) and carbon dioxide, sulfate reduction utilizes sulfate (SO_4^{-2}) and produces sulfide and carbon dioxide, and finally methanogenesis produces methane (CH_4) and carbon dioxide (USEPA, 1998).

4. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The following summarizes the findings from the recent investigation activities at the Site:

- The groundwater gradient is oriented to the west-southwest and towards the creek.
- Ambient groundwater quality indicates that the groundwater is not potable due to ambient elevated electrical conductivity and other physical features.
- Lead and TPHmo in the tidal creek and drainage ditch bed and banks appear to pose a low to insignificant level of risk to potential ecological and human receptors. Based on these findings, conditions in and above the drainage ditch do not appear to be significantly impacting the tidal creek sediments.
- Concentrations of TPHg in groundwater are decreasing independent of groundwater elevation.
- Overall, concentrations of petroleum hydrocarbons in groundwater have declined below historical highs and ESLs, and the plume has remained relatively stable for four quarters.

Based on the data, additional investigation and monitoring of Site conditions does not appear to be warranted. It is recommended that the RWQCB consider no further action for the Site.

SELECTED REFERENCES

American Society for Testing and Materials. *Standard Guide for Representative Sampling for Management of Waste and Contaminated Media*. ASTM Designation D 6044-96. January 1997.

California State Water Resources Control Board, San Francisco Bay Region. *Resolution No. 88-63, Adoption of Policy Entitled "Sources Of Drinking Water.* 1988.

California Regional Water Quality Control Board, San Francisco Bay Region. *San Francisco Basin – Water Quality Control.* 1995.

California Regional Water Quality Control Board, San Francisco Bay Region. *Memorandum - Regional Board Supplemental Instructions to State Water Board December 8, 1995, Interim Guidance on Required Cleanup at Low-Risk Fuel Sites.* January 5, 1996.

California State Water Resources Control Board, San Francisco Bay Region. *Draft Staff Report, Beneficial Reuse of Dredged Materials: Sediment Screening and Testing Guidelines.* May 2000

California Regional Water Quality Control Board, San Francisco Bay Region. *Screening for Environmental Concerns at Sites With Contaminated Soil and Groundwater.* Interim Final Report, February 2005.

Environmental Geology Services. *Interim remedial Action, 5 Ashford Avenue, Mill Valley, California.* June 14, 1999.

Environmental Resource Group, Inc. *Groundwater Monitoring, 3rd Quarter 2004 Report.* January 2005.

Environmental Resource Group, Inc. *Ground Water Monitoring, 1st Quarter 2004, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California.* May 2004.

Environmental Resource Group, Inc. *Monitor Well and Creek Bank Sampling, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California.* February 2003.

Environmental Resource Group, Inc. *Ground Water And Creek Sediment Investigation and 2nd And 3rd Quarter 2001 Ground Water Monitoring.* September 2001.

Environmental Resource Group, Inc. *Ground Water Monitoring Report for October 2000.* December 8, 2000.

EnviroNet Consulting, Inc. *Quarterly Groundwater Monitoring Report for 5 Ashford Avenue, Mill Valley, California.* April 1, 1998.

Lawrence Livermore National Laboratory. *Groundwater Investigation and Remediation, LLNL Environmental Report for 1998.* 1998.

Lawrence Livermore National Laboratory. *Recommendations to Improve the Cleanup Processes for California's Leaking Underground Fuel Tanks*. October 16, 1995.

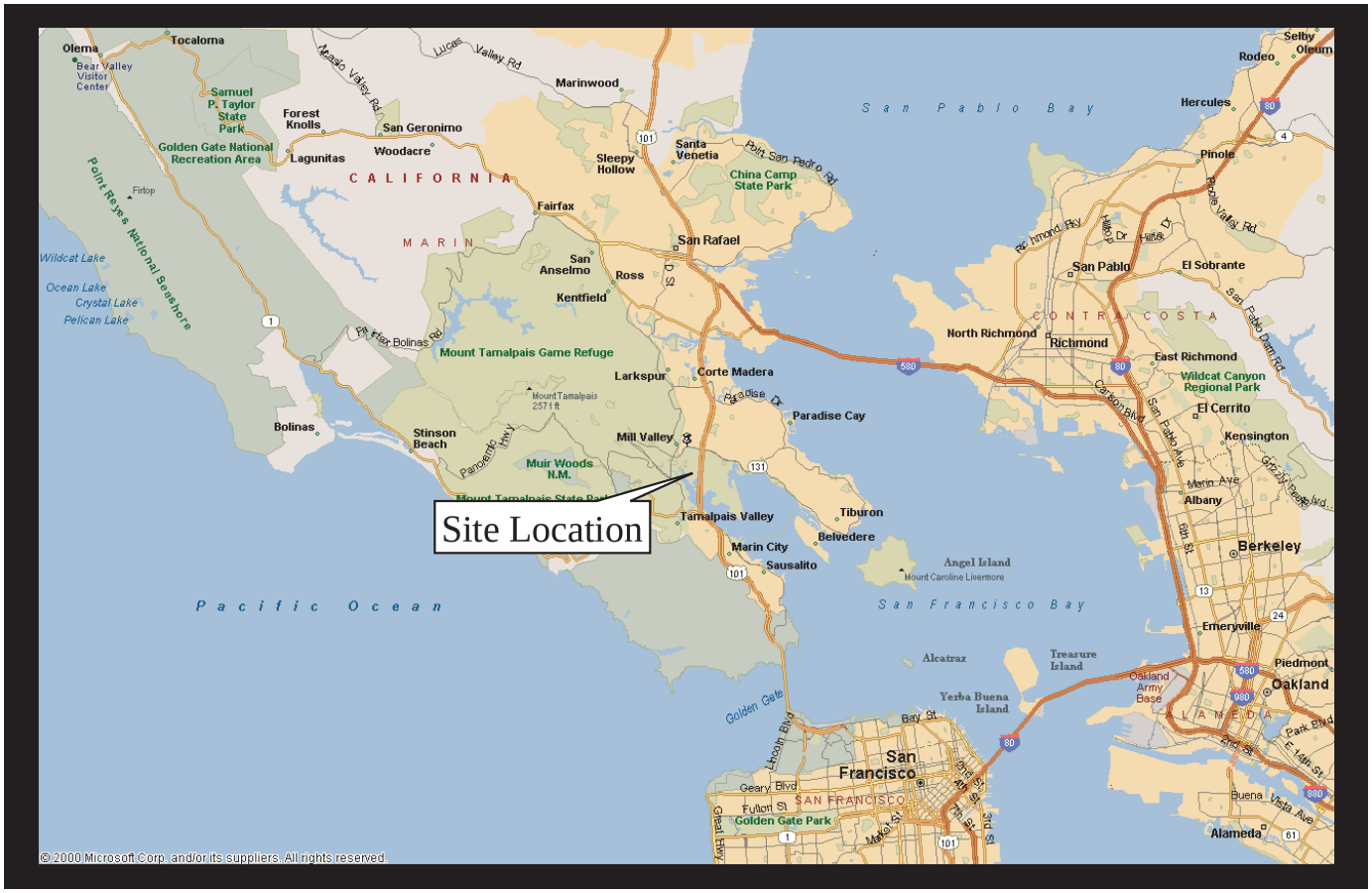
Sierra Environmental Services. *Phase II Subsurface Investigation, Redwood Service Station #116, 5 Ashford, Mill Valley, California.* April 3, 1991.

Sierra Environmental Services. *Subsurface Investigation, Redwood Oil Service Station, 5 Ashford, Mill Valley, California.* September 28, 1990.

State Water Resources Control Board. *Resolution No. 1021b, (Draft) Policy for Investigation and Cleanup of Petroleum Discharges to Soil and Groundwater.* November 1996.

United States Environmental Protection Agency. *Monitored Natural Attenuation for Groundwater.* September 1998.

PLATES

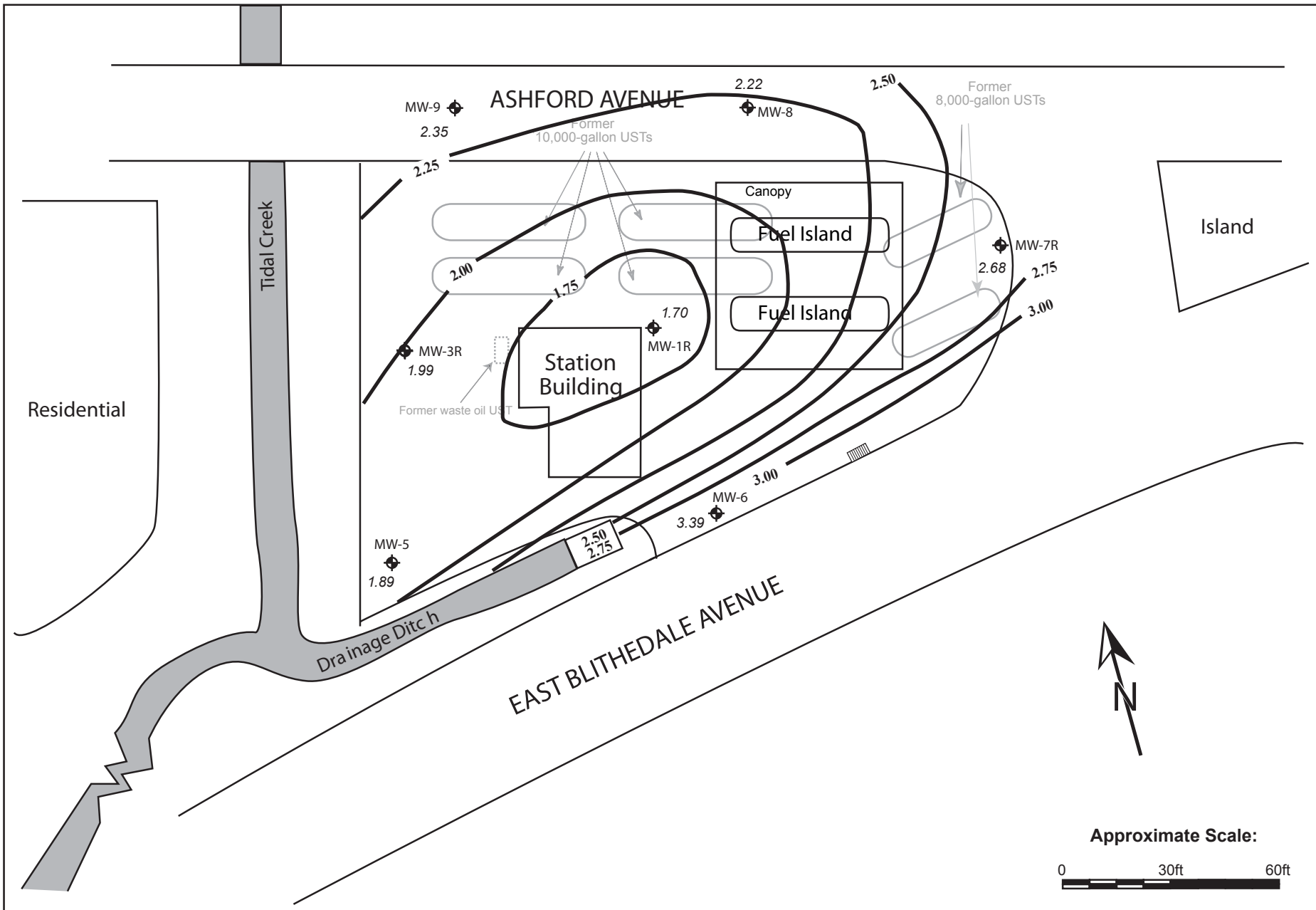


kilometers: 0 10 20 30 40

miles: 0 10 20

N

ERG Environmental Resource Group	**ALFA GAS STATION** 5 Ashford Avenue, Mill Valley, California	**Plate 1.** Site Location



ERG
Environmental Resource Group

ALFA GAS STATION

5 Ashford Avenue, Mill Valley, California

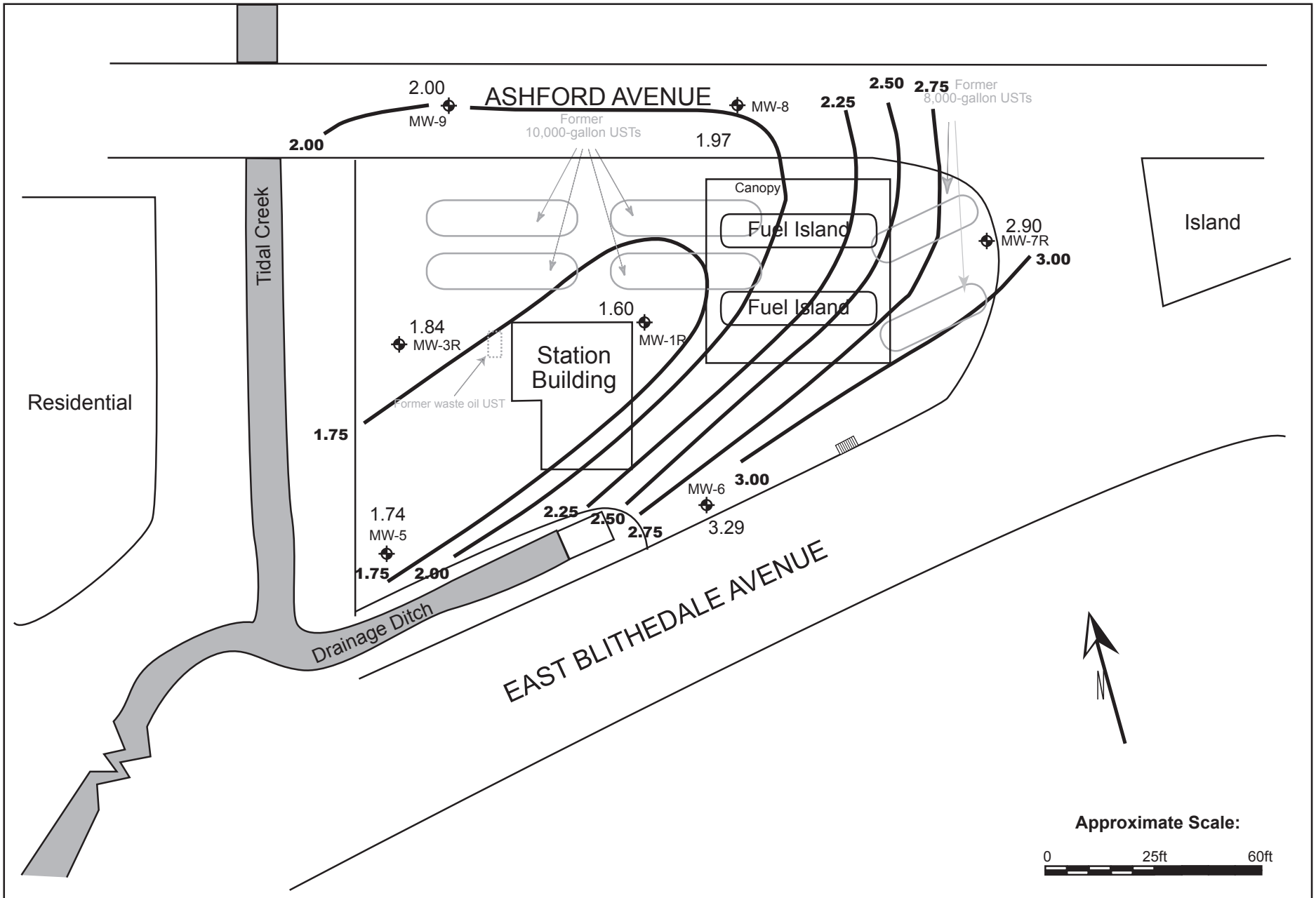
March 24, 2004

2.25 Equal groundwater elevation contour (feet datum)

MW-3R
1.70 Monitoring well with groundwater surface elevation (feet datum)

Plate 2 rev

Groundwater
Potentiometric Surface



ERG
Environmental Resource Group

ALFA GAS STATION

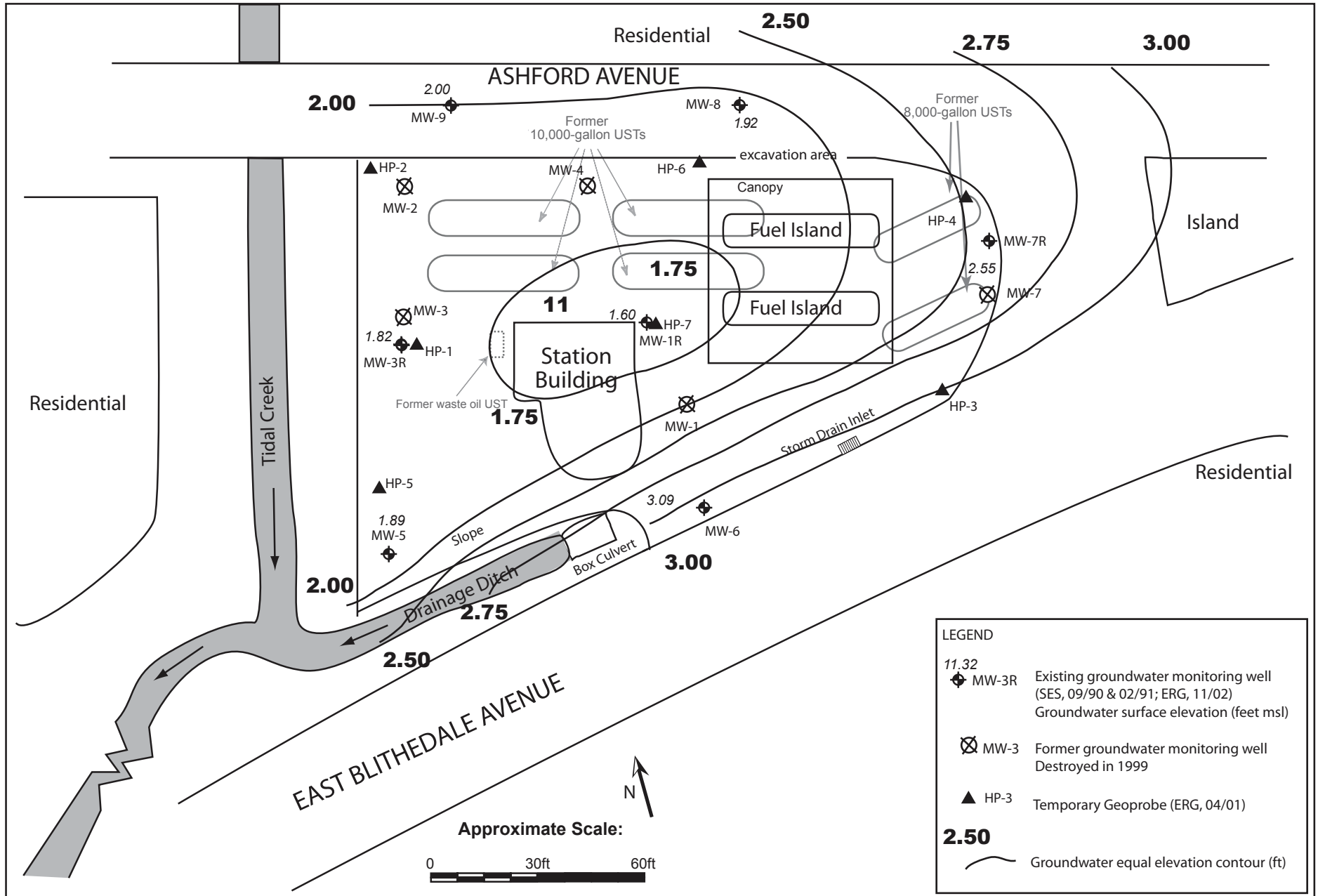
5 Ashford Avenue, Mill Valley, California

June 14, 2004

MW-3R 1.84 — *Monitoring well location with groundwater surface elevation (feet datum)*

2.25 — *Groundwater equal elevation contour (feet datum)*

Plate 3 rev
Groundwater Potentiometric Surface



ERG
Environmental Resource Group

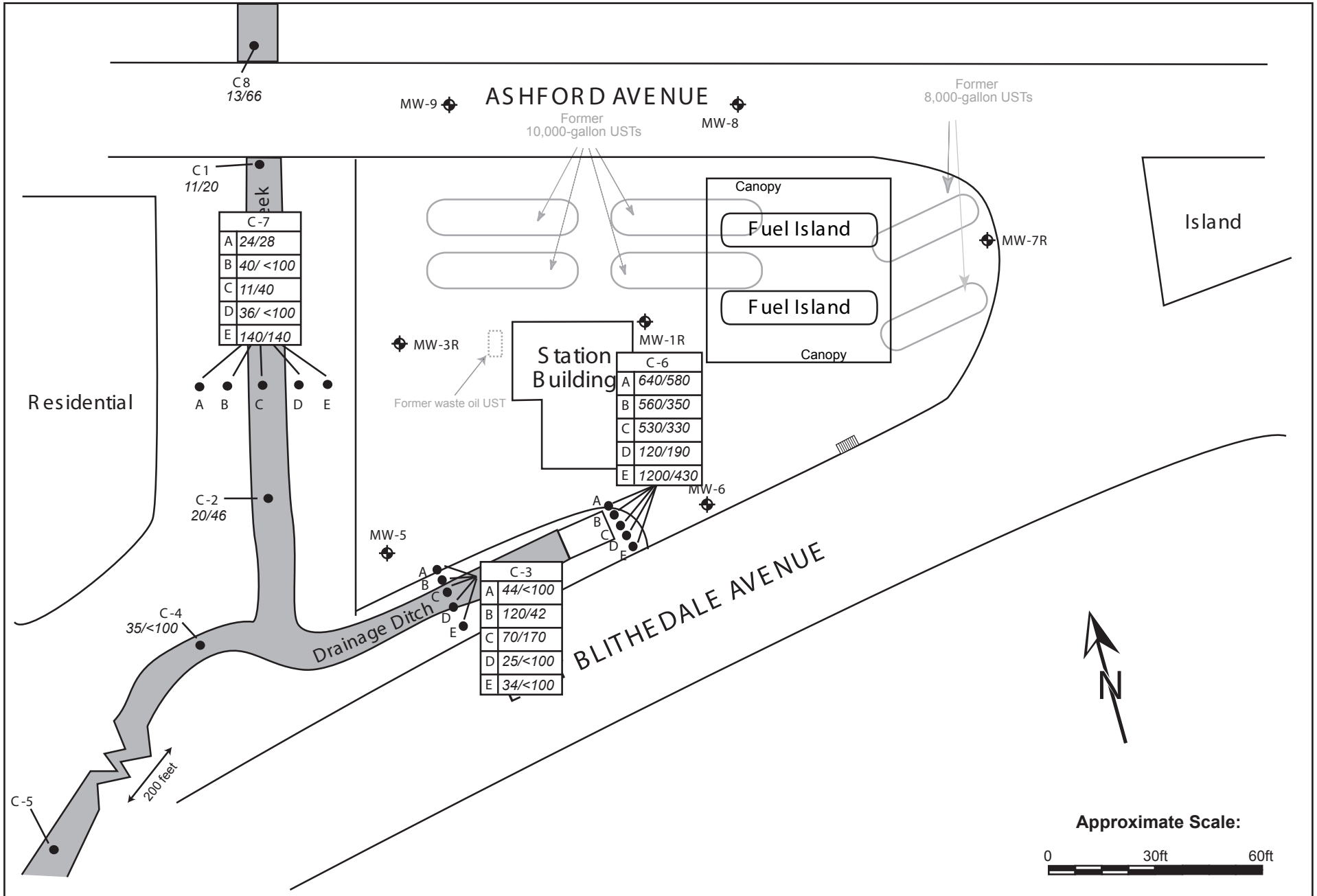
ALFA GAS STATION

5 Ashford Avenue, Mill Valley, California

September 24, 2004

Plate 4 rev

Groundwater Potentiometric Surface Map for



ERG
Environmental Resource Group

ALFA GAS STATION

5 Ashford Avenue, Mill Valley, California

November 11, 2002

MW-3R Monitoring Well Location

C8 / 13 / 66 Surface Soil Samples (0-6")
Lead (mg/kg) / TPHmo (mg/kg)

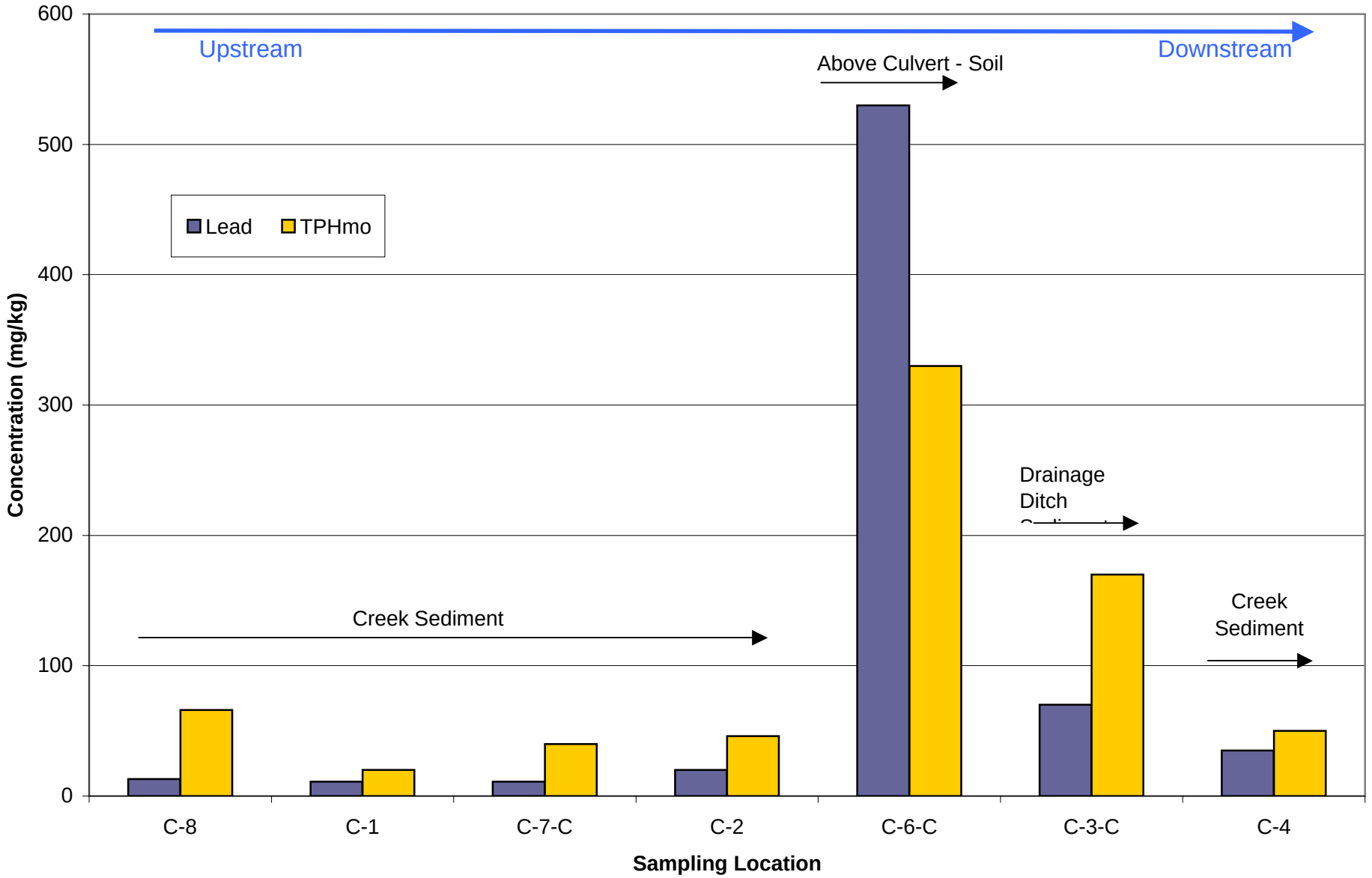
Plate 5

Lead and Total Petroleum Hydrocarbons as Motor Oil in Surface Soil

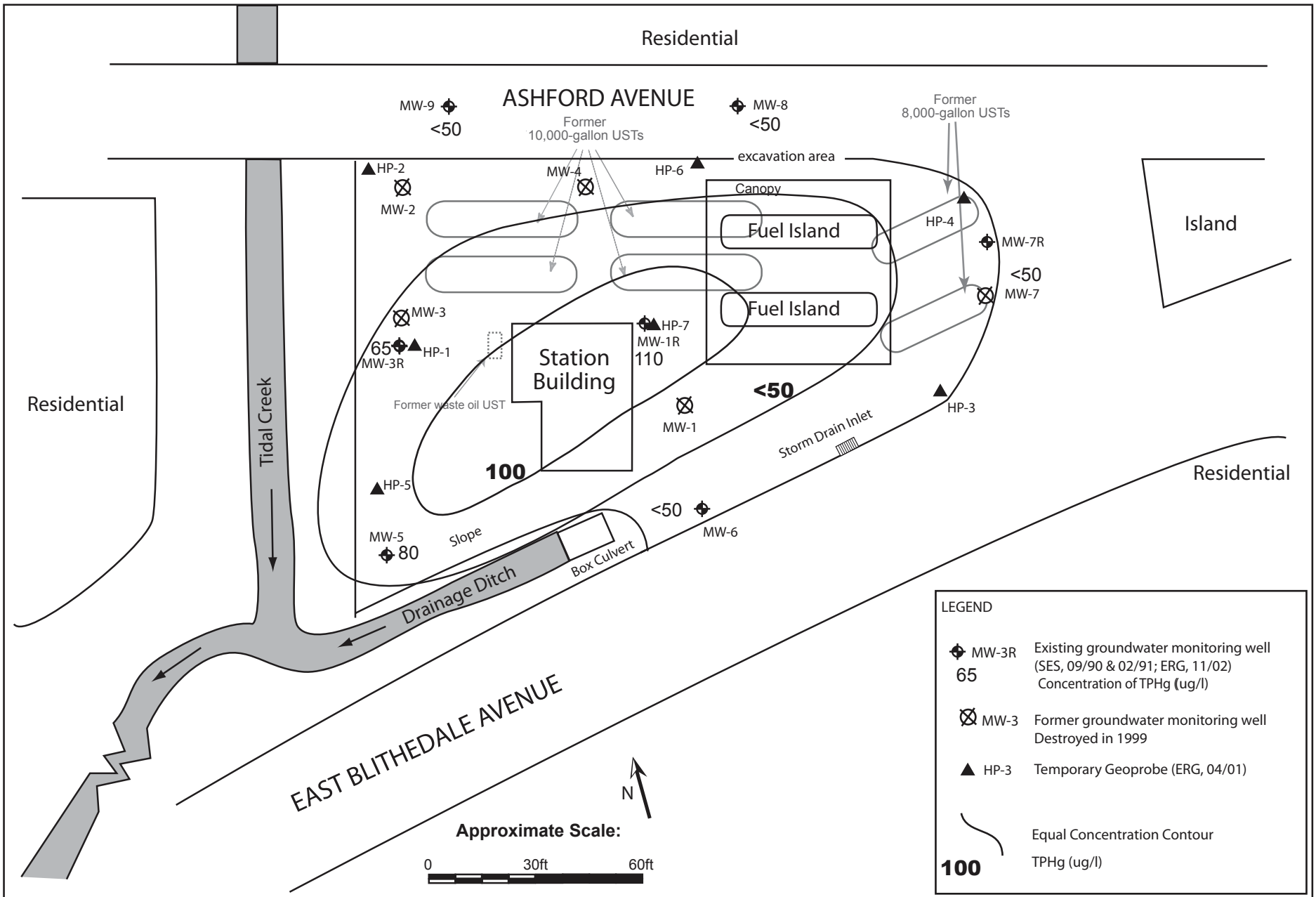
PLATE 6

Distribution of Lead and TPHmo Downstream in Creek and Drainage Ditch

ALFA Gas Station, 5 Ashford Avenue, Mill Valley, California



Environmental Resource Group, Inc.



ERG
Environmental Resource Group

ALFA GAS STATION

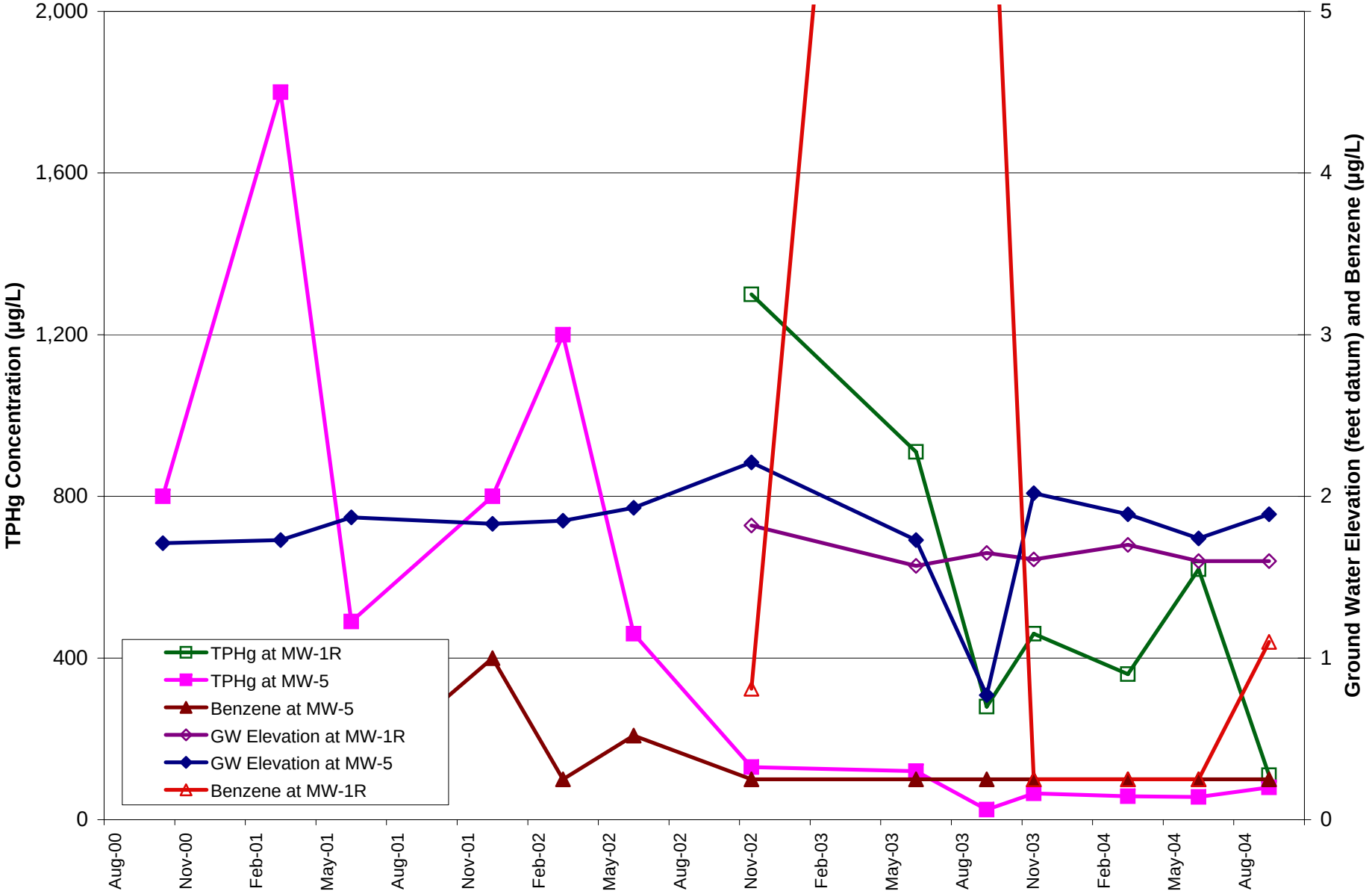
5 Ashford Avenue, Mill Valley, California

September 24, 2004

Plate 7 rev

Distribution of Total Petroleum Hydrocarbons in Groundwater

Plate 8
Petroleum Hydrocarbons and Groundwater Elevation in MW-1 and MW-5
ALFA Gas Station, 5 Ashford Avenue, Mill Valley, California



Environmental Resource Group, Inc.

TABLES

Table 1
Groundwater Elevations and Observations,
Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California

Well:	MW-1R		MW-3R		MW-5		MW-6		MW-7R		MW-8		MW-9	
TOC :	5.95		5.74		5.44		6.89		6.00		6.32		6.10	
Screened Interval:	8 to 15 feet		9 to 15 feet		3.5 to 13.5 feet		3.5 to 13.5 feet		8 to 15 feet		3.5 to 13.5 feet		4 to 12 feet	
Date	DTW	GE	DTW	GE	DTW	GE	DTW	GE	DTW	GE	DTW	GE	DTW	GE
10/04/00	--	--	--	--	3.73	1.71	4.34	2.55	--	--	4.28	2.04	4.27	1.83
03/30/01	--	--	--	--	3.71	1.73	4.22	2.67	--	--	4.49	1.83	4.09	2.01
06/28/01	--	--	--	--	3.57	1.87	4.10	2.79	--	--	4.26	2.06	4.22	1.88
12/11/01	--	--	--	--	3.61	1.83	3.96	2.93	--	--	3.81	2.51	3.19	2.91
03/28/02	--	--	--	--	3.59	1.85	4.15	2.74	--	--	4.21	2.11	3.63	2.47
06/26/02	--	--	--	--	3.51	1.93	3.80	3.09	--	--	4.00	2.32	3.94	2.16
11/19/02	4.13	1.82	3.61	2.13	3.23	2.21	3.96	2.93	11.21	-5.21	4.15	2.17	3.21	2.89
06/25/03	4.38	1.57	3.95	1.79	3.71	1.73	3.85	3.04	3.18	2.82	4.89	1.43	4.47	1.63
09/25/03	4.30	1.65	4.91	0.83	4.67	0.77	3.90	2.99	3.61	2.39	4.38	1.94	4.00	2.1
11/04/03	4.34	1.61	3.84	1.90	3.42	2.02	5.04	1.85	4.83	1.17	4.16	2.16	3.78	2.32
03/24/04	4.25	1.70	3.75	1.99	3.55	1.89	3.50	3.39	3.32	2.68	4.10	2.22	3.75	2.35
06/14/04	4.35	1.60	3.90	1.84	3.70	1.74	3.60	3.29	3.10	2.90	4.35	1.97	4.10	2.00
09/24/04	4.35	1.60	3.92	1.82	3.55	1.89	3.80	3.09	3.45	2.55	4.40	1.92	4.10	2.00

Notes:

DTW: Depth to water in feet below top of well casing.

GE: Groundwater elevation = top of well casing elevation minus depth-to-water.

TOC: Surveyed elevation of top of casing in feet by Luk & Associates, December 2003 (ERG, January 2005)

Screen Interval: Screened interval in feet below ground surface

Source

10/4/00: Environmental Resource Group, Inc. (ERG, December 8, 2000): "*Ground Water Monitoring Report for October 2000, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California.* "

3 & 6/01: ERG (September 2001): "*Ground Water And Creek Sediment Investigation and 2nd and 3rd Quarter 2001 Ground Water Monitoring, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California.* "

12/11/01: ERG (February 2002): "*Ground Water Monitoring, 4th Quarter 2001, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California.* "

2002: ERG (February 2003): "*Monitor Well and Creek Bank Sampling, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California.* "

6/25/03: ERG (September 2003): "*Ground Water Monitoring, 2nd Quarter 2003* , *Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California.* "

9/25/03: ERG (December 2003): "*Ground Water Monitoring, 3rd Quarter 2003* , *Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California.* "

11/4/03: ERG (March 2004): "*Ground Water Monitoring, 4th Quarter 2003* , *Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California.* "

3/24/04: ERG (May 2004): "*Ground Water Monitoring, 1st Quarter 2004* , *Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California.* "

6/14/04: ERG (October 2004): "*Ground Water Monitoring, 2nd Quarter 2004* , *Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California.* "

9/24/04: ERG (January 2005): "*Ground Water Monitoring, 3rd Quarter 2004* , *Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California.* "

Table 2: Soil and Sediment Samples Analytical Results,
5 Ashford Avenue, Mill Valley, CA

Sampling Location	Sample Area	Sample Date	Sample ID	Sample Depth	Lead	TPHmo	TPHd	TPHg	BTEX	MTBE [1]
				(inches bgs)	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Drainage Ditch										
Transect C-3 (Below Box Culvert)	North Bank	11/11/02	C-3-A	0 to 6	**44**	<100	<5.0	<1.0	<0.005	<2.0
	North Bank	11/11/02	C-3-B	0 to 6	**120**	**42**	<5.0	<1.0	<0.005	<2.0
	Ditch Bed	11/11/02	C-3-C	0 to 6	**70**	**170**	**41**	<1.0	<0.005	<2.0
	Ditch Bed	04/30/01	C-3-2'	24.0	**650**	**150**	**130**	<1.0	<0.005	**2.6**
	Ditch Bed	04/30/01	C-3-4'	48.0	**62**	<100	**13**	<1.0	<0.005	<2.0
	South Bank	11/11/02	C-3-D	0 to 6	**25**	<100	<5.0	<1.0	<0.005	<2.0
	South Bank	11/11/02	C-3-E	0 to 6	**34**	<100	<5.0	<1.0	<0.005	<2.0
Transect C-6 (Above Box Culvert)	East End	11/11/02	C-6-A	0 to 6	**640**	**580**	**87**	<1.0	<0.005	<2.0
		11/11/02	C-6-B	0 to 6	**560**	**350**	**63**	<1.0	<0.005	<2.0
		11/11/02	C-6-C	0 to 6	**530**	**330**	**47**	<1.0	<0.005	<2.0
		11/11/02	C-6-D	0 to 6	**120**	**190**	**21**	<1.0	<0.005	<2.0
		11/11/02	C-6-E	0 to 6	**1,200**	**430**	**75**	<1.0	<0.005	<2.0
TOTAL NUMBER OF SAMPLES: 12										
1) Environmental Screening Levels (SF Bay RWQCB, February 2005)										
Residential, Non-Drinking Water Resource (Table B-1)					150	500	100	100	0.18 B, 9.3 T, 32 E, 11 X	8.4
Commercial/Industrial, Non-Drinking Water Resource (Table B-2)					750	1,000	500	400	0.38 B, 9.3 T, 32 E, 11 X	8.4
2) Background Maximum (Shacklette & Boerngen, 1984)					48	N/A	N/A	N/A	N/A	NA
3) Sediment Screening Guidelines (SF Bay RWQCB, May 2000)										
Recommended Wetland Surface Material (< 3 feet bgs)					43.2	NE	NE	NE	NE	NE
Probable Effect Levels					218	NE	NE	NE	NE	NE

Table 2: Soil and Sediment Samples Analytical Results,
5 Ashford Avenue, Mill Valley, CA

Sampling Location	Sample Area	Sample Date	Sample ID	Sample Depth	Lead	TPHmo	TPHd	TPHg	BTEX	MTBE [1]
				(inches bgs)	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Tidal Creek										
Location C-1	Creek Bed (Upstream)	11/11/02	C-1	0 to 6	**11**	**20**	<5.0	<1.0	<0.005	<2.0
		04/30/01	C-1-2'	24.0	**5.1**	<100	**16**	<1.0	<0.005	<2.0
		04/30/01	C-1-4'	48.0	**9**	<100	**18**	<1.0	<0.005	<2.0
Location C-2	Creek Bed	11/11/02	C-2	0 to 6	**20**	**46**	<5.0	<1.0	<0.005	<2.0
		04/30/01	C-2-2'	24.0	**34**	<100	**13**	<1.0	<0.005	**3.0**
		04/30/01	C-2-4'	48.0	**6.1**	<100	<5.0	<1.0	<0.005	<2.0
Location C-4	Creek Bed (Downstream)	11/11/02	C-4	0 to 6	**35**	<100	<5.0	<1.0	<0.005	<2.0
		04/30/01	C-4-2'	24.0	**11**	<100	**23**	<1.0	<0.005	<2.0
		04/30/01	C-4-4'	48.0	**25**	<100	**14**	<1.0	<0.005	<2.0
Location C-5	Creek Bed (Downstream)	04/30/01	C-5-2'	24.0	**41**	**100**	**41**	<1.0	<0.005	<2.0
		04/30/01	C-5-4'	48.0	**26**	<100	<5.0	<1.0	<0.005	<2.0
Transect C-7	West Bank	11/11/02	C-7-A	0 to 6	**24**	**28**	<5.0	<1.0	<0.005	<2.0
	West Bank	11/11/02	C-7-B	0 to 6	**40**	<100	<5.0	<1.0	<0.005	<2.0
	Creek Bed	11/11/02	C-7-C	0 to 6	**11**	**40**	<5.0	<1.0	<0.005	<2.0
	East Bank	11/11/02	C-7-D	0 to 6	**36**	<100	**30**	<1.0	<0.005	<2.0
	East Bank	11/11/02	C-7-E	0 to 6	**140**	**140**	<5.0	<1.0	<0.005	<2.0
Location C-8	Creek Bed (Upstream)	11/11/02	C-8	0 to 6	**13**	**66**	**35**	<1.0	<0.005	<2.0
TOTAL NUMBER OF SAMPLES: 17										
1) Environmental Screening Levels (SF Bay RWQCB, February 2005)										
Residential, Non-Drinking Water Resource (Table B-1)					150	500	100	100	0.18 B, 9.3 T, 32 E, 11 X	8.4
Commercial/Industrial, Non-Drinking Water Resource (Table B-2)					750	1,000	500	400	0.38 B, 9.3 T, 32 E, 11 X	8.4
2) Background Maximum (Shacklette & Boerngen, 1984)					48	N/A	N/A	N/A	N/A	NA
3) Sediment Screening Guidelines (SF Bay RWQCB, May 2000)										
Recommended Wetland Surface Material (< 3 feet)					43.2	NE	NE	NE	NE	NE
Probable Effect Levels					218	NE	NE	NE	NE	NE

Table 2: Soil and Sediment Samples Analytical Results, 5 Ashford Avenue, Mill Valley, CA

Notes:

General

mg/kg:	Milligrams per kilogram
NA:	Not analyzed
N/A:	Not applicable
NE:	Not established
Sample Depth:	Depth in inches below ground surface, bgs
TPHg:	Total purgeable petroleum hydrocarbons as gasoline by Environmental Protection Agency (EPA) Method 8015M
TPHd:	Total extractable petroleum hydrocarbons as diesel by EPA Method 8015M
TPHmo:	Total extractable petroleum hydrocarbons as motor oil by EPA Method 8015M
BTEX:	Benzene, toluene, ethylbenzene and total xylenes by EPA Method 8020
MTBE:	Methyl tert-butyl ether by EPA Method 8260M for the April 2001 and November 2002 samples
Lead:	Total lead by EPA Method 6010

Screening Levels: 1) Environmental screening levels (ESLs) published by the San Francisco Bay Region, Regional Water Quality Control Board (SF Bay RWQCB, February 2005): *"Screening for Environmental Concerns at Sites With Contaminated Soil and Groundwater,"* incorporating ESL updates and corrections.
Table B-1 ESLs correspond to shallow soil, residential land use and Table B-2 ESLs to shallow soil, commercial/industrial land use, both where groundwater IS NOT a current or potential drinking water resource.
TPHd: ESL for TPH (middle distillates) TPHmo: ESL for TPH (residual fuels) TPHg: ESL for TPH (gasoline)

2) Shacklette, H. T. and Boerngen, J. G. (1984): *"Element Concentrations in Soils and Other Surficial Materials, Conterminous United States,"* U. S. Geological Survey Professional Paper 1270. Data represent upper estimate of regional background.

3) SF Bay RWQCB (May 2000): *"Beneficial Reuse of Dredged Materials: Sediment Screening and Testing Guidelines,"* Draft Staff Report, May 2000

Detail

1 The April 2001 samples were analyzed for the other fuel oxygenates besides MTBE, namely tert-butyl alcohol (TBA), tert-amyl methyl ether (TAME), ethyl tert-butyl ether (ETBE), and di-isopropyl ether (DIPE). Analytical results indicated no detectable levels of TBA, TAME, ETBE and DIPE above reporting limits.

Source

April 2001: Environmental Resource Group, Inc. (ERG, September 2001): *"Ground Water And Creek Sediment Investigation and 2nd and 3rd Quarter 2001 Ground Water Monitoring, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."*

November 2002: ERG (February 2003): *"Monitor Well and Creek Bank Sampling, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."*

Table 3.
Grab Groundwater Samples Analytical Results,
Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California

Sample	Date	TPHg	TPHd	Benzene	Toluene	Ethyl Benzene	Total Xylenes	TBA	MTBE	DIPE	ETBE	TAME
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
HP-1 [3]	04/30/01	**310** [1]	<50	<0.5	<0.5	<0.5	<1.5	<250	**310**	<10	<10	<10
HP-2	04/30/01	<50	<50	<0.5	<0.5	<0.5	<1.5	<25	**42**	<1.0	<1.0	<1.0
HP-3	04/30/01	**2,100** [1]	<50	<0.5	**0.67**	**0.92**	**4.1**	<1,000	**2,100**	<50	<50	**130**
HP-4	04/30/01	**240** [1]	<500	<0.5	<0.5	<0.5	<1.5	<100	**240**	<5.0	<5.0	**12**
HP-5	04/30/01	<50	<50	<0.5	**0.60**	<0.5	<1.5	<25	**2.1**	**5.8**	<1.0	<1.0
HP-6	04/30/01	**86** [2]	<50	<0.5	<0.5	**0.80**	**3.9**	<25	**78**	<1.0	<1.0	**3.4**
HP-7	04/30/01	**1,300** [1]	**1,200**	<10	<10	<10	<20	<1,000	**1,300**	<50	<50	<50
SF Bay RWQCB Environmental Screening Levels (Table F-1b)												
Gross Contamination Ceiling Value		5,000	2,500	20,000	400	300	5,300	1,800	50,000	NE	NE	NE
Vapor Intrusion Into Buildings		Use Soil Gas	Use Soil Gas	540	380,000	170,000	160,000	24,000	Use Soil Gas	NE	NE	NE
Estuary Aquatic Habitat Goal		500	640	46	130	290	100	8,000	18,000	NE	NE	NE

Notes:

General

µg/L	Micrograms per liter (parts per billion equivalent)
mg/L	Milligrams per liter (parts per million equivalent)
<50	Not detected at or above laboratory detection limit
NE	Not established
TPHg	Total purgeable petroleum hydrocarbons as gasoline by Environmental Protection Agency (EPA) Method 8015M
TPHd	Total extractable petroleum hydrocarbons as diesel by EPA Method 8015M
BTEX	Benzene, toluene, ethylbenzene and total xylenes by EPA Method 8020
Oxygenates	Methyl-tert-butyl-ether (MTBE), tert-butyl alcohol (TBA), di-isopropyl ether (DIPE), ethyl tert-butyl ether (ETBE) and tert-amyl methyl ether (TAME) by EPA Method 8260M

Environmental screening levels (ESLs) were taken from the San Francisco Bay Region, California Regional Water Quality Control Board (SF Bay RWQCB, February 2005): *"Screening for Environmental Concerns at Sites With Contaminated Soil and Groundwater,"* with ESL updates and corrections. Table F1-b where groundwater IS NOT a current or potential source of drinking water

TPHd: ESL for TPH (middle distillates) TPHg: ESL for TPH (gasoline) TPHg: ESL for TPH (gasoline)

Detail

1	According to the laboratory, the TPHg result consists exclusively of MTBE.
2	According to the laboratory, the TPHg result consists primarily of MTBE.
3	Sample HP-1 was analyzed for volatile organic compounds (VOCs) by EPA Method 8260, semi-volatile organic compounds (SVOCs) by EPA Method 8270, TPH as motor oil by EPA Method 8015M, and cadmium, chromium, lead, nickel plus zinc by EPA Method 3050/6010. Analyticals were: ND (<2.0 µg/L) for VOCs, ND (<0.33 to 1.5 µg/L) for SVOCs, ND (<200 µg/L) for TPHmo, and ND (<0.05 to 0.10 mg/L) for metals.

Source

Environmental Resource Group (September 2001): *"Ground Water And Creek Sediment Investigation and 2nd and 3rd Quarter 2001 Ground Water Monitoring, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."*

Table 4
Groundwater Monitoring Analytical Results - Petroleum Hydrocarbons,
Alfa Gas Station, 5 Ashford Avenue, Mill Valley, CA

Well	Date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	TBA	DIPE	ETBE	TAME	Lead
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-1	9/12/90 [1]	<50	**410**	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	12/13/90 [2]	**520**	**230**	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	03/13/91	<50	**190**	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	06/12/91	<50	**110**	<500	**0.6**	<0.5	<0.5	**0.6**	--	--	--	--	--	--
	09/12/91	<50	<50	<500	**1.2**	**1.3**	<0.5	**1.8**	--	--	--	--	--	--
	08/25/92	<50	<50	--	<0.3	<0.3	<0.3	<0.6	--	--	--	--	--	--
	04/27/93	<50	**1,300** [8]	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	2/27/98 [3]	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	**36**	--	--	--	--	<5.0
	6/23/98 [3]	<50	**2,410** [5]	**2,370** [4]	<0.5	<0.5	<0.5	<0.5	**6.92**	--	--	--	--	<5.0
MW-1R	11/19/02	**1,300**	**560**	<200	**0.81**	<0.5	**0.67**	<1.5	**510**	**820**	<10	<10	**16**	--
	06/25/03	**910** [10]	**160**	<200	**12**	**0.71**	<0.5	<1.5	**880**	<250	<10	<10	**28**	--
	09/25/03	**280**	**64**	<200	**6.8**	<0.5	<0.5	<1.5	**400**	<250	<10	<10	<10	--
	11/04/03	**460** [10]	<50	<200	<0.5	<0.5	<0.5	<1.5	**450**	<250	<10	<10	**12**	--
	03/24/04	**360** [10]	<50	<200	<0.5	<0.5	<0.5	<1.5	**350**	<250	<10	<10	**7.7**	--
	06/14/04	**620** [10]	<50	<200	<0.5	<0.5	<0.5	<1.5	**420**	**190**	<5.0	<5.0	**12**	--
	09/24/04	**110** [10]	<50	--	**1.1**	<0.5	<0.5	<1.5	**110**	--	--	--	--	--
MW-2	9/12/90 [1]	**90**	**320**	<500	<0.5	<0.5	<0.5	**0.55**	--	--	--	--	--	--
	12/30/90	**130**	**340**	<500	**4.4**	<0.5	<0.5	<0.5	--	--	--	--	--	--
	03/13/91	**70**	**280**	<500	**3.0**	**0.5**	<0.5	**1.0**	--	--	--	--	--	--
	06/12/91	--	--	--	--	--	--	--	--	--	--	--	--	--
	09/12/91	--	--	--	--	--	--	--	--	--	--	--	--	--
	08/25/92	<50	<50	--	<0.3	<0.3	<0.3	<0.3	--	--	--	--	--	--
	04/27/93	<50	**2,100** [8]	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	2/27/98 [3]	<50	**610** [5]	<250	<2.5	<2.5	<2.5	<2.5	**230**	--	--	--	--	<5.0
	6/23/98 [3]	<250	**596** [5]	<250	<2.5	<2.5	<2.5	<2.5	**460**	--	--	--	--	<5.0
MW-3	9/12/90 [1]	<50	**230**	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	12/30/90	<50	**210**	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	03/13/91	**60**	**240**	<500	**1.5**	**0.9**	<0.5	**2.5**	--	--	--	--	--	--
	06/12/91	<50	**140**	<500	**1.2**	<0.5	<0.5	<0.5	--	--	--	--	--	--
	09/12/91	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	08/25/92	<50	<50	--	<0.3	<0.3	<0.3	<0.6	--	--	--	--	--	--
	04/27/93	<50	<50	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	2/27/98 [3]	<50	**33**	<250	<0.5	<0.5	<0.5	<0.5	**1.8**	--	--	--	--	<5.0
	6/23/98 [3]	<50	**1,560**	<250	<0.5	<0.5	<0.5	<0.5	**5.23**	--	--	--	--	<5.0
SF Bay RWQCB Environmental Screening Levels (Table F-1b)														
Gross Contamination Ceiling Value		5,000	2,500	2,500	20,000	400	300	5,300	1,800	50,000	NE	NE	NE	50,000
Vapor Intrusion Into Buildings		Use Soil Gas	Use Soil Gas	N/A	540	380,000	170,000	160,000	24,000	Use Soil Gas	NE	NE	NE	N/A
Estuary Aquatic Habitat Goal		500	640	640	46	130	290	100	8,000	18,000	NE	NE	NE	2.5

Table 4
Groundwater Monitoring Analytical Results - Petroleum Hydrocarbons,
Alfa Gas Station, 5 Ashford Avenue, Mill Valley, CA

Well	Date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	TBA	DIPE	ETBE	TAME	Lead
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-3R	11/19/02	**370**	<50	<200	<0.5	<0.5	<0.5	<1.5	**150**	**220**	<2.5	<2.5	**3.4**	--
	06/25/03	**160** [10]	<50	<200	**2.0**	<0.5	<0.5	<1.5	**160**	<50	<2.0	<2.0	**2.7**	--
	09/25/03	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	**35**	<50	<2.0	<2.0	<2.0	--
	11/04/03	**140** [10]	<50	<200	<0.5	<0.5	<0.5	<1.5	**140**	<50	<2.0	<2.0	**2.4**	--
	03/24/04	**75** [10]	<50	<200	<0.5	<0.5	<0.5	<1.5	**75**	<50	<2.0	<2.0	<1.0	--
	06/14/04	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<50	**40**	<2.0	<2.0	<2.0	--
	09/24/04	**65** [10]	<50	--	<0.5	<0.5	<0.5	<1.5	**65**	--	--	--	--	--
MW-4	9/12/90 [1]	**14,000**	**1,800**	<500	**2,200**	**660**	**200**	**870**	--	--	--	--	--	--
	12/30/1990	**540**	**730**	<500	**94**	**2.3**	<0.5	**3.3**	--	--	--	--	--	--
	03/13/91	**28,000**	**2,400**	<500	**900**	**100**	**1,800**	**4,200**	--	--	--	--	--	--
	06/12/91	--	--	--	--	--	--	--	--	--	--	--	--	--
	09/12/91	--	--	--	--	--	--	--	--	--	--	--	--	--
	08/25/92	**270**	**1,600**	--	**47**	**0.74**	**3**	**1.5**	--	--	--	--	--	--
	04/27/93	<50	**14,000** [7,8]	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	2/27/98 [3]	**27,000**	**560** [5]	<500	**840**	<5	**27**	<5	**23,000**	--	--	--	--	<5.0
	6/23/98 [3]	<500	**1,990** [5]	**4,560** [4]	**7.19**	<5	<5	<5	**991**	--	--	--	--	<5.0
MW-5	2/20/91 [1]	<50	**100**	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	06/12/91	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	09/12/91	<50	<50	**800**	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	08/25/92	<50	<50	--	<0.3	<0.3	<0.3	<0.6	--	--	--	--	--	--
	04/27/93	<50	**780** [8]	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	2/27/98 [3]	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	**2,300**	--	--	--	--	<5.0
	6/23/98 [3]	<50	**329** [5]	<263	<0.5	<0.5	<0.5	<0.5	**4,320** [9]	--	--	--	--	<5.0
	10/04/00	**800** [10]	<50	<200	<0.5	<0.5	<0.5	<1.5	**790**	<1,000	<50	<50	<50	<100
	03/30/01	**1,800** [10]	<50	<200	<0.5	<0.5	<0.5	<1.5	**1,800**	<500	<20	<20	<20	--
	06/28/01	**490** [10]	<50	<200	<0.5	<0.5	<0.5	<1.5	**490**	<500	<20	<20	<20	--
	12/11/01	**800** [10]	<50	<200	**1.0**	<0.5	<0.5	<1.5	**500**	**310**	<5.0	<5.0	<5.0	--
	03/28/02	**1,200**	<50	<200	<0.5	<0.5	<0.5	<1.5	**360**	**810**	<1.0	<1.0	1.0	--
	06/26/02	**460** [10]	<50	<200	**0.52**	<0.5	<0.5	<1.5	**460**	<25	<1.0	<1.0	1.1	--
	11/19/02	**130**	<50	<200	<0.5	<0.5	<0.5	<1.5	**54**	**75**	<1.0	<1.0	<1.0	--
	06/25/03	**120** [10]	<50	<200	<0.5	<0.5	<0.5	<1.5	**120**	<25	<1.0	<1.0	<1.0	--
	09/25/03	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	**65**	<25	<1.0	<1.0	<1.0	--
	11/04/03	**65** [10]	<50	<200	<0.5	<0.5	<0.5	<1.5	**65**	<25	<1.0	<1.0	<1.0	--
	03/24/04	**58** [10]	<50	<200	<0.5	<0.5	<0.5	<1.5	**58**	<25	<1.0	<1.0	<1.0	--
	06/14/04	**56** [10]	<50	<200	<0.5	<0.5	<0.5	<1.5	**56**	<25	<1.0	<1.0	<1.0	--
	09/24/04	**80** [10]	<50	--	<0.5	<0.5	<0.5	<1.5	**80**	--	--	--	--	--
SF Bay RWQCB Environmental Screening Levels (Table F-1b)														
Gross Contamination Ceiling Value		5,000	2,500	2,500	20,000	400	300	5,300	1,800	50,000	NE	NE	NE	50,000
Vapor Intrusion Into Buildings		Use Soil Gas	Use Soil Gas	N/A	540	380,000	170,000	160,000	24,000	Use Soil Gas	NE	NE	NE	N/A
Estuary Aquatic Habitat Goal		500	640	640	46	130	290	100	8,000	18,000	NE	NE	NE	2.5

Table 4
Groundwater Monitoring Analytical Results - Petroleum Hydrocarbons,
Alfa Gas Station, 5 Ashford Avenue, Mill Valley, CA

Well	Date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	TBA	DIPE	ETBE	TAME	Lead
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-6	2/20/91 [1]	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	06/12/91	<50	**110**	<500	**1.2**	**0.9**	**0.8**	**1.1**	--	--	--	--	--	--
	09/12/91	<50	<50	<500	**0.7**	**0.9**	<0.5	**1.2**	--	--	--	--	--	--
	08/25/92	<50	<50	--	<0.3	<0.3	<0.3	<0.6	--	--	--	--	--	--
	04/27/93	<50	**130** [8]	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	2/27/98 [3]	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	**36**	--	--	--	--	<5.0
	6/23/98 [3]	<50	**180** [5]	<250	<0.5	<0.5	<0.5	<0.5	<2.0	--	--	--	--	<5.0
	10/04/00	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<2.0	<50	<2.0	<2.0	<2.0	<100
	03/30/01	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	06/28/01	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	12/11/01	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	03/28/02	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	06/26/02	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	11/19/02	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	**7.3**	<25	<1.0	<1.0	<1.0	--
	06/25/03	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	09/25/03	**87**	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	11/04/03	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	03/24/04	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	06/14/04	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	09/24/04	<50	<50	--	<0.5	<0.5	<0.5	<1.5	**5.4**	--	--	--	--	--
MW-7	2/20/91 [1]	**390**	**1,100**	<500	**1.4**	**0.6**	**0.6**	**1.5**	--	--	--	--	--	--
	06/12/91	**8,200**	**1,400**	**5,400**	**2,300**	**35**	**720**	**150**	--	--	--	--	--	--
	09/12/91	**3,700**	**550**	<500	**300**	**17**	**210**	**67**	--	--	--	--	--	--
	08/25/92	**2,150**	<50	--	**1,770**	**16**	**92**	**34**	--	--	--	--	--	--
	04/27/93	**6,700**	**2,200** [7,8]	--	**3,300**	**16**	**250**	**68**	--	--	--	--	--	--
	2/27/98 [3]	**17,000**	**1,500** [5,6]	<250	**1,900**	**29**	**25**	**17**	**7,100**	--	--	--	--	<5.0
	6/23/98 [3]	**7,520**	**1,240** [5,6]	**264** [4]	**1,200**	**32.2**	**23.2**	**25.0**	**3,320**	--	--	--	--	<5.0
MW-7R	11/19/02	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	**7.2**	<25	<1.0	<1.0	<1.0	--
	06/25/03	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	**3.2**	<25	<1.0	<1.0	<1.0	--
	09/25/03	<50	<50	<200	**0.63**	**0.70**	<0.5	<1.5	**21**	<25	<1.0	<1.0	<1.0	--
	11/04/03	<50	<50	<200	<0.5	**0.51**	<0.5	<1.5	**9.9**	<25	<1.0	<1.0	<1.0	--
	03/24/04	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	**8.9**	<25	<1.0	<1.0	<1.0	--
	06/14/04	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	**3.4**	<25	<1.0	<1.0	<1.0	--
	09/24/04	<50	<50	--	<0.5	<0.5	<0.5	<1.5	**15**	--	--	--	--	--
SF Bay RWQCB Environmental Screening Levels (Table F-1b)														
Gross Contamination Ceiling Value		5,000	2,500	2,500	20,000	400	300	5,300	1,800	50,000	NE	NE	NE	50,000
Vapor Intrusion Into Buildings		Use Soil Gas	Use Soil Gas	N/A	540	380,000	170,000	160,000	24,000	Use Soil Gas	NE	NE	NE	N/A
Estuary Aquatic Habitat Goal		500	640	640	46	130	290	100	8,000	18,000	NE	NE	NE	2.5

Table 4
Groundwater Monitoring Analytical Results - Petroleum Hydrocarbons,
Alfa Gas Station, 5 Ashford Avenue, Mill Valley, CA

Well	Date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	TBA	DIPE	ETBE	TAME	Lead
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-8	2/20/91 [1]	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	06/12/91	<50	**60**	<500	**1.0**	**0.6**	**0.5**	**0.7**	--	--	--	--	--	--
	09/12/91	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	08/25/92	<50	<50	--	<0.3	<0.3	<0.3	<0.6	--	--	--	--	--	--
	04/27/93	<50	**90** [8]	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	2/27/98 [3]	<50	**76** [5]	<250	<0.5	<0.5	<0.5	<0.5	<2.0	--	--	--	--	<5.0
	6/23/98 [3]	<50	**411** [5]	<263	<0.5	<0.5	<0.5	<0.5	**3.56**	--	--	--	--	<5.0
	10/04/00	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<2.0	<50	<2.0	<2.0	<2.0	<100
	03/30/01	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	06/28/01	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	12/11/01	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	03/28/02	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	06/26/02	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	11/19/02	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	06/25/03	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	09/25/03	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	11/04/03	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	03/24/04	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	06/14/04	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	09/24/04	<50	<50	--	<0.5	<0.5	<0.5	<1.5	<1.0	--	--	--	--	--
MW-9	2/20/91 [1]	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	06/12/91	<50	<50	<500	**0.9**	**0.6**	<0.5	**0.7**	--	--	--	--	--	--
	09/12/91	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	08/25/92	<50	<50	--	<0.3	<0.3	<0.3	<0.6	--	--	--	--	--	--
	04/27/93	<50	<50	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	2/27/98 [3]	<50	**80**	<250	<0.5	<0.5	<0.5	<0.5	<2.0	--	--	--	--	<5.0
	6/23/98 [3]	<50	**180**	<250	<0.5	<0.5	<0.5	<0.5	<2.0	--	--	--	--	<5.0
	10/04/00	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<2.0	<50	<2.0	<2.0	<2.0	<100
	03/30/01	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	06/28/01	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	12/11/01	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	03/28/02	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	06/26/02	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	11/19/02	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	06/25/03	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	09/25/03	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	11/04/03	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	03/24/04	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	06/14/04	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	09/24/04	<50	<50	--	<0.5	<0.5	<0.5	<1.5	<1.0	--	--	--	--	--
SF Bay RWQCB Environmental Screening Levels (Table F-1b)														
Gross Contamination Ceiling Value		5,000	2,500	2,500	20,000	400	300	5,300	1,800	50,000	NE	NE	NE	50,000
Vapor Intrusion Into Buildings		Use Soil Gas	Use Soil Gas	N/A	540	380,000	170,000	160,000	24,000	Use Soil Gas	NE	NE	NE	N/A
Estuary Aquatic Habitat Goal		500	640	640	46	130	290	100	8,000	18,000	NE	NE	NE	2.5

Table 4
Groundwater Monitoring Analytical Results - Petroleum Hydrocarbons, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, CA

Well	Date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	TBA	DIPE	ETBE	TAME	Lead
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L

Notes:

General

µg/L	Micrograms per liter (parts per billion equivalent)
mg/L	Milligrams per liter (parts per million equivalent)
<50	Not detected at or above laboratory detection limit
--	Not analyzed
NE	Not established
N/A	Not applicable
TPHg	Total purgeable petroleum hydrocarbons as gasoline by Environmental Protection Agency (EPA) Method 8015M
TPHd	Total extractable petroleum hydrocarbons as diesel by EPA Method 8015M
TPHmo	Total extractable petroleum hydrocarbons as motor oil by EPA Method 8015M
BTEX	Benzene, toluene, ethylbenzene and total xylenes by EPA Method 8020/602
MTBE	Methyl-tert-butyl-ether by EPA Method 8260M/8260B, except by EPA Method 8020 for the 1998 sampling event
TBA	Tert-butyl alcohol by EPA Method 8260M/8260B
DIPE	Di-isopropyl ether by EPA Method 8260M/8260B
ETBE	Ethyl tert-butyl ether by EPA Method 8260M/8260B
TAME	Tert-amyl methyl ether by EPA Method 8260M/8260B
Lead	Dissolved lead by EPA Method 7421

Environmental screening levels (ESLs) were taken from the San Francisco Bay Region, Regional Water Quality Control Board (SF Bay RWQCB, February 2005): *"Screening for Environmental Concerns at Sites With Contaminated Soil and Groundwater,"* Table F1-b with ESL updates and corrections, where groundwater IS NOT a current or potential source of drinking water

TPHd: ESL for TPH (middle distillates)
TPHmo: ESL for TPH (residual fuels)
TPHg: ESL for TPH (gasoline)

Detail

1	The initial samples from Wells MW-1 through MW-9 were analyzed for organic lead by DHC LUFT Method. Analytical results were ND (<2,000 µg/L).
2	The 12/13/90 sample from Well MW-1 was also analyzed for chloride by EPA Method 300 and total dissolved solids (TDS) by EPA Method 160.1 Analytical results were 15,000 milligrams per liter (mg/L) chloride and 27,000 mg/L TDS.
3	During the 02/27/98 and 06/23/98 groundwater sampling events, the groundwater samples were collected without purging the wells prior to sampling. Thus, these samples grab samples of groundwater from the wells.
4	The laboratory reported the hydrocarbon pattern present in the requested fuel quantitation range does not resemble the fuel pattern.
5	The laboratory reported the results in the diesel organics range are primarily due to overlap from a heavy oil range product.
6	The laboratory reported the results in the diesel organics range are primarily due to overlap from a gasoline range product.
7	The Laboratory reported the positive result for petroleum hydrocarbons as diesel appears to be due to the presence of heavier hydrocarbons rather than diesel.
8	The laboratory reported the positive result for petroleum hydrocarbons as diesel appears to be due to a combination of heavier and lighter hydrocarbons rather than diesel.
9	According to the laboratory, the results was analyzed outside of the EPA recommended holding time.
10	According to the laboratory, the TPHg result consists almost exclusively or primarily of MTBE.

Table 4
Groundwater Monitoring Analytical Results - Petroleum Hydrocarbons,
Alfa Gas Station, 5 Ashford Avenue, Mill Valley, CA

Well	Date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	TBA	DIPE	ETBE	TAME	Lead
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L

Notes (Continuation):
Source

9/12/90: Sierra Environmental Services (SES, September 28, 1990): *"Subsurface Investigation, Redwood Oil Service Station, 5 Ashford, Mill Valley, California."*

12/13/90: SES (January 7, 1991): *"Redwood Oil Service Station, 5 Ashford, Mill Valley, California."*

3/13/91: SES (April 3, 1991): *"Phase II Subsurface Investigation, Redwood Service Station #116, 5 Ashford, Mill Valley, California."*

6/12/91: SES (July 10, 1991): *"Redwood Oil Service Station, 5 Ashford, Mill Valley, California."*

9/12/91: SES (October 7, 1991): *"Redwood Oil Service Station, 5 Ashford, Mill Valley, California."*

1992-1993: SES (May 26, 1993): *"5 Ashford, Mill Valley, California."*

2/27/98: EnviroNet Consulting (EnviroNet, April 1, 1998): *"Quarterly Groundwater Monitoring Report for 5 Ashford Avenue, Mill Valley, California."*

6/23/98: EnviroNet (August 24, 1998): *"Quarterly Groundwater Monitoring Report for 5 Ashford Avenue, Mill Valley, California."*

10/4/00: Environmental Resource Group, Inc. (ERG, December 8, 2000): *"Ground Water Monitoring Report for October 2000, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."*

3 & 6/01: ERG (September 2001): *"Ground Water And Creek Sediment Investigation and 2nd and 3rd Quarter 2001 Ground Water Monitoring, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."*

12/11/01: ERG (February 2002): *"Ground Water Monitoring, 4th Quarter 2001, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."*

2002: ERG (February 2003): *"Monitor Well and Creek Bank Sampling, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."*

6/25/03: ERG (September 2003): *"Ground Water Monitoring, 2nd Quarter 2003, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."*

9/25/03: ERG (December 2003): *"Ground Water Monitoring, 3rd Quarter 2003, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."*

11/4/03: ERG (March 2004): *"Ground Water Monitoring, 4th Quarter 2003, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."*

3/24/04: ERG (May 2004): *"Ground Water Monitoring, 1st Quarter 2004, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."*

6/14/04: ERG (October 2004): *"Ground Water Monitoring, 2nd Quarter 2004, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."*

9/24/04: ERG (January 2005): *"Ground Water Monitoring, 3rd Quarter 2004, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."*

Table 5
Groundwater Monitoring Analytical Results - Natural Attenuation Parameters,
Alfa Gas Station, 5 Ashford Avenue, Mill Valley, CA

Sample	Date	Dissolved Oxygen (O_2)	Carbon Dioxide (CO_2)	Nitrate (NO_3^{-1})	Sulfate (SO_4^{-2})	Ferrous Iron (Fe+2)	Methane	Total Alkalinity	pH	Electrical Conductivity
		mg/L	mg CO_2/L	mg/L	mg/L	mg/L	mg/L	mg $CaCO_3$/L	S.U.	µmhos /cm
MW-5	26-Jun-02		410	--	--	--	<1,000	1,300	6.8	--
MW-6			210	--	--	--	<1,000	850	6.9	--
MW-8			1,100	--	--	--	<1,000	3,400	6.8	--
MW-9			7.9	--	--	--	<1,000	250	6.8	--
MW-1R	19-Nov-02	--	--	--	--	--	--	--	6.99	5,200
MW-3R		--	--	--	--	--	--	--	6.92	5,540
MW-5		--	--	--	--	--	--	--	8.10	8,430
MW-6		--	--	--	--	--	--	--	--	8,430
MW-7R		--	--	--	--	--	--	--	--	5,260
MW-8		--	--	--	--	--	--	--	--	4,300
MW-9		--	--	--	--	--	--	--	--	5,890
MW-1R	25-Jun-03	1.4	140	0.93	750	9.9	3,800	1,900	7.59	18,440
MW-3R		1.8	740	0.58	270	11	1,800	1,500	6.71	14,630
MW-5		1.3	210	1.2	6.1	2	<500	510	6.64	11,180
MW-6		1.5	210	1.4	1,100	<0.50	3,200	1,400	7.35	15,540
MW-7R		2.3	770	1.3	1,400	<0.50	<500	2,500	7.21	20,000+
MW-8		1.0	480	1.5	94	37	680	3,400	6.66	20,000+
MW-9		3.3	70	1.2	220	<0.50	<500	360	6.71	14,800
MW-1R	25-Sep-03	--	--	--	--	--	--	--	6.19	11,520
MW-3R		--	--	--	--	--	--	--	6.40	10,100
MW-5		--	--	--	--	--	--	--	6.91	7,080
MW-6		--	--	--	--	--	--	--	6.61	10,790
MW-7R		--	--	--	--	--	--	--	6.25	13,630
MW-8		--	--	--	--	--	--	--	5.93	17,960
MW-9		--	--	--	--	--	--	--	6.60	13,470
MW-1R	4-Nov-03	1.1	--	--	--	--	--	--	6.66	7,180
MW-3R		1.6	--	--	--	--	--	--	6.83	6,020
MW-5		2.2	--	--	--	--	--	--	6.35	5,800
MW-6		1.1	--	--	--	--	--	--	6.50	7,280
MW-7R		1.7	--	--	--	--	--	--	7.10	10,230
MW-8		1.8	--	--	--	--	--	--	5.66	13,920
MW-9		2.9	--	--	--	--	--	--	6.89	9,620
MW-1R	24-Mar-04	1.0	--	--	--	--	--	--	6.10	13,650
MW-3R		1.5	--	--	--	--	--	--	5.74	14,000
MW-5		1.0	--	--	--	--	--	--	6.40	3,860
MW-6		0.9	--	--	--	--	--	--	5.85	13,240
MW-7R		1.4	--	--	--	--	--	--	5.84	16,240
MW-8		0.9	--	--	--	--	--	--	4.70	20,000+
MW-9		1.9	--	--	--	--	--	--	7.12	7,530
MW-1R	14-Jun-04	0.3	--	--	--	--	--	--	5.94	19,290
MW-3R		0.4	--	--	--	--	--	--	5.94	19,510
MW-5		0.5	--	--	--	--	--	--	6.25	10,040
MW-6		0.5	--	--	--	--	--	--	6.17	20,000+
MW-7R		1.5	--	--	--	--	--	--	4.89	20,000+
MW-8		0.7	--	--	--	--	--	--	6.39	20,000+
MW-9		1.6	--	--	--	--	--	--	6.98	20,000+
MW-1R	24-Sep-04	0.7	--	--	--	--	--	--	6.72	15,550
MW-3R		0.3	--	--	--	--	--	--	6.61	17,520
MW-5		0.4	--	--	--	--	--	--	6.58	14,060
MW-6		--	--	--	--	--	--	--	6.72	16,490
MW-7R		0.7	--	--	--	--	--	--	--	20,000+
MW-8		1.4	--	--	--	--	--	--	--	20,000+
MW-9		1.4	--	--	--	--	--	--	6.85	20,000+

Table 5
Groundwater Monitoring Analytical Results - Natural Attenuation Parameters,
Alfa Gas Station, 5 Ashford Avenue, Mill Valley, CA

Notes:

General

Dissolved Oxygen (O_2):	Based on field instrument measurement in milligrams per liter (mg/L)
Carbon dioxide (CO_2):	SM 4500 in milligrams of CO_2 per liter (mg CO_2/L)
Nitrate (NO_3^{-1}):	EPA 300 (IC) in mg/L
Sulfate (SO_4^{-2}):	EPA 300 (IC) in mg/L
Ferrous iron (Fe^{+2}):	SM 3500 in mg/L
Methane:	EPA 8015M in mg/L
Total alkalinity:	EPA 310.1 in milligrams of $CaCO_3$ per liter (mg $CaCO_3$/L)
pH:	EPA 150.1 in standard units (S.U.)
Elect conductivity:	Based on field instrument measurement in micromhos per centimeter (µmhos /cm)
--	Not analyzed/not reported

Source

2002:	ERG (February 2003): *"Monitor Well and Creek Bank Sampling, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."*
6/25/03:	ERG (September 2003): *"Ground Water Monitoring, 2nd Quarter 2003, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."*
9/25/03:	ERG (December 2003): *"Ground Water Monitoring, 3rd Quarter 2003, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."*
11/4/03:	ERG (March 2004): *"Ground Water Monitoring, 4th Quarter 2003, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."*
3/24/04:	ERG (May 2004): *"Ground Water Monitoring, 1st Quarter 2004, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."*
6/14/04:	ERG (October 2004): *"Ground Water Monitoring, 2nd Quarter 2004, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."*
9/24/04:	ERG (January 2005): *"Ground Water Monitoring, 3rd Quarter 2004, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."*

APPENDIX A
BORING LOGS

c:\azuresdwg\ltyplog

LITHOLOGY | SAMPLE DATA

Well/Boring No.: MW-1R

Depth (feet)	Graphic Log	Description	Sample No. and Interval	Penatration Rate (blows/ft.) PID
		Ashalt 6"		
	SC	silt gravelly Sand, Strong brown (7.5YR 5/6), slight moist med plasticity, med soft, med end of silt, no odor		0.0
5				
		wet		0.0
10			No Recovery	
15		TD 15'	No Recovery	
20		* Screen 3' to 15'		
25				
30				
35				

Explanation:

Clay | Silt | Sand | Gravel

Drilling Method: Auger
Sampling Method: push
Drilling company: Greg
Drillers: Paul

Permit No.:
Geologist: Ben Wells

Figure: Soil Boring Lithology and Sample Data

Project No.: | Date: 11/11/02 | Project Name: 5 Alpa | Page 1 of 1

c:\azuredwg\ltyplog

LITHOLOGY | SAMPLE DATA

Well/Boring No.: MW-3R

Depth (feet)	Graphic Log	Description	Sample No. and Interval	Penatration Rate (blows/ft.) PID
		→ Asphalt 6"		
	ML	silt clay - dark greenish gray (3/1 5GY), moist, Med plasticity, very fine sands		0.0
5				
		wet med odor		0.0
10		Bay Mud	No Recovery wet clay	
15		TD 15'	no recovery wet clay	
20				
25		* 2" PVC * Slot 0.01 * Sand 2/16		
30		* Screen 9' to 15'		
35				

Explanation:

Clay | Silt | Sand | Gravel

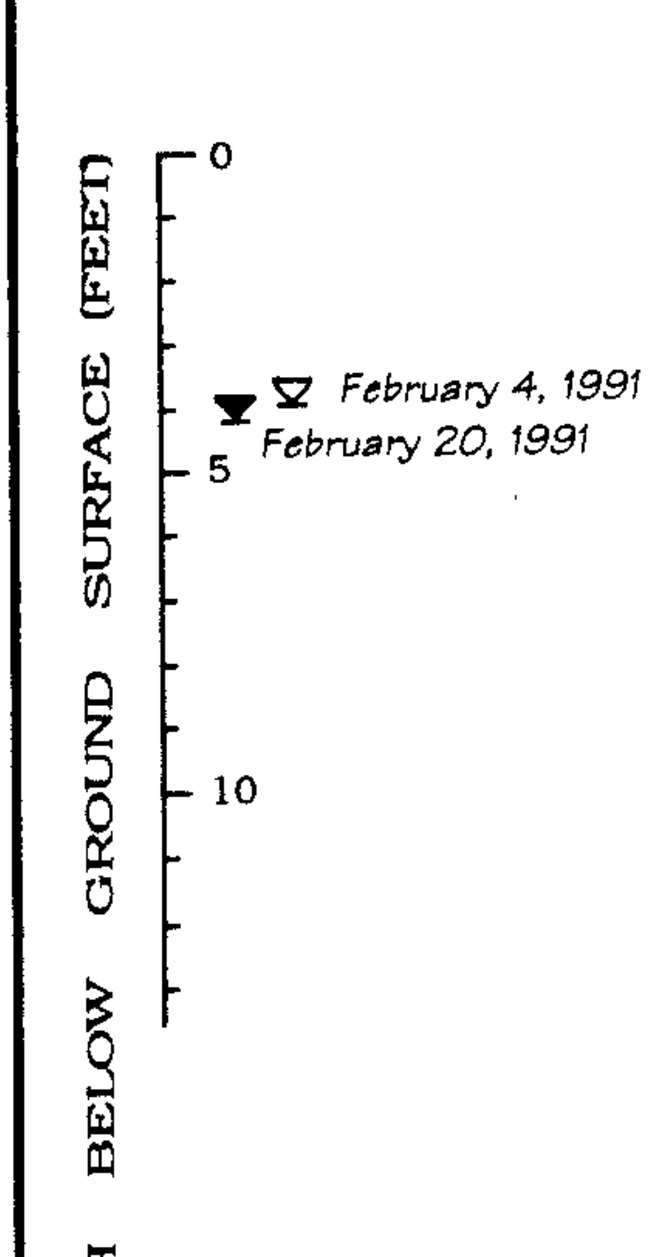
Drilling Method: Auger
Sampling Method: Acetate liner
Drilling company: Gregg
Drillers: Paul

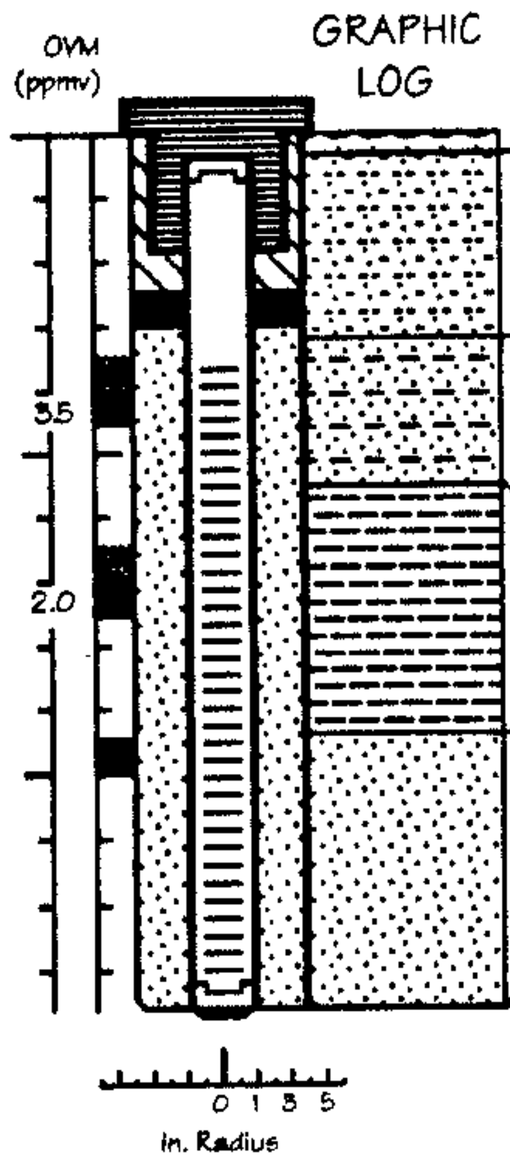
Permit No.:
Geologist: Ben Wells

ENVIRONMENTAL, R.G.	Figure: Soil Boring Lithology and Sample Data
Project No.	Date: 11/11/02
Project Name: 5 Alfa	Page 1 of 1

WELL MW-5

SIERRA





DESCRIPTION

3" Asphalt

Silty SAND (SM): light brown; damp to moist; very loose; 20-30% silt; moderate est K

Clayey SAND (SC): gray-green mottled black and brown; damp; very loose; 10-15% clay; very fine to fine sand; moderate est K

CLAY (OH): gray-green mottled black; moist; soft; low est K; plastic; moderate organic odor; some peat and organics

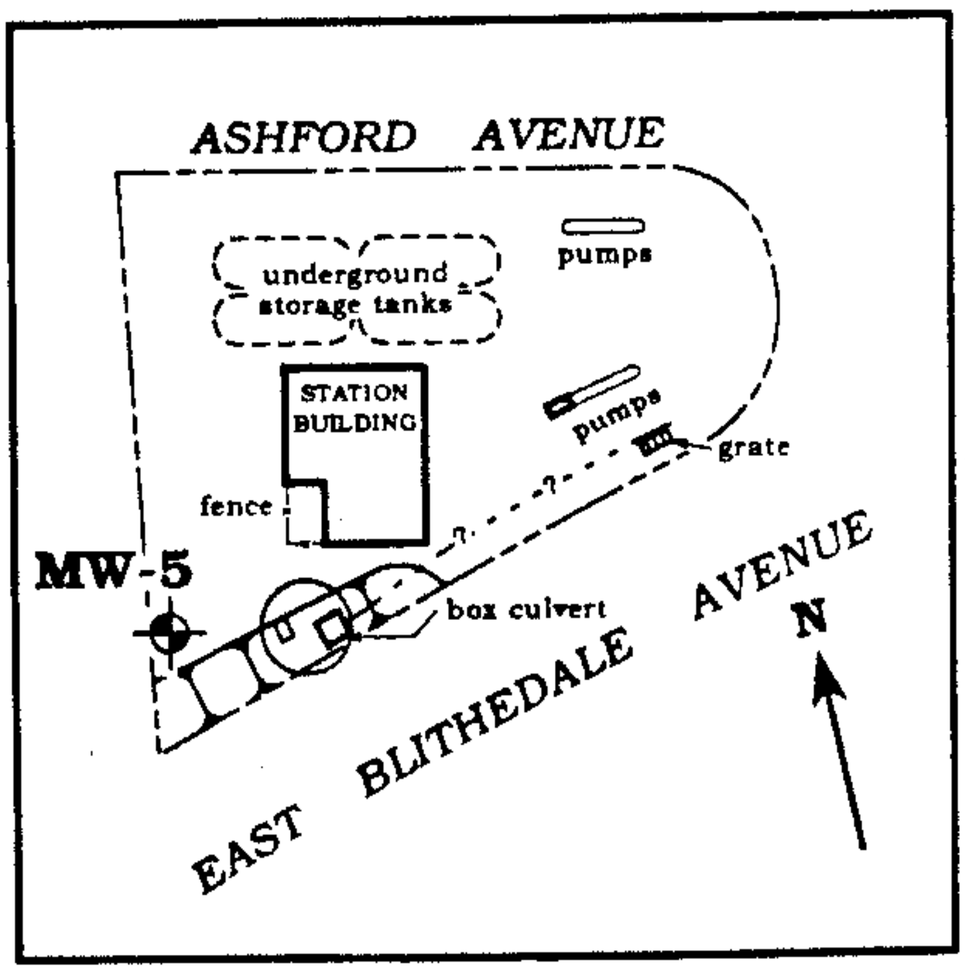
SAND (SP): gray-green; wet; very loose; very fine to fine sand; high est K; moderate organic odor

Clayey SAND (SC): gray-green; wet; very loose; 20-30% clay; very fine sand; moderate est K; moderate organic odor; plastic
BOH at 13.5'

Well Construction and Boring Log - Well MW-5

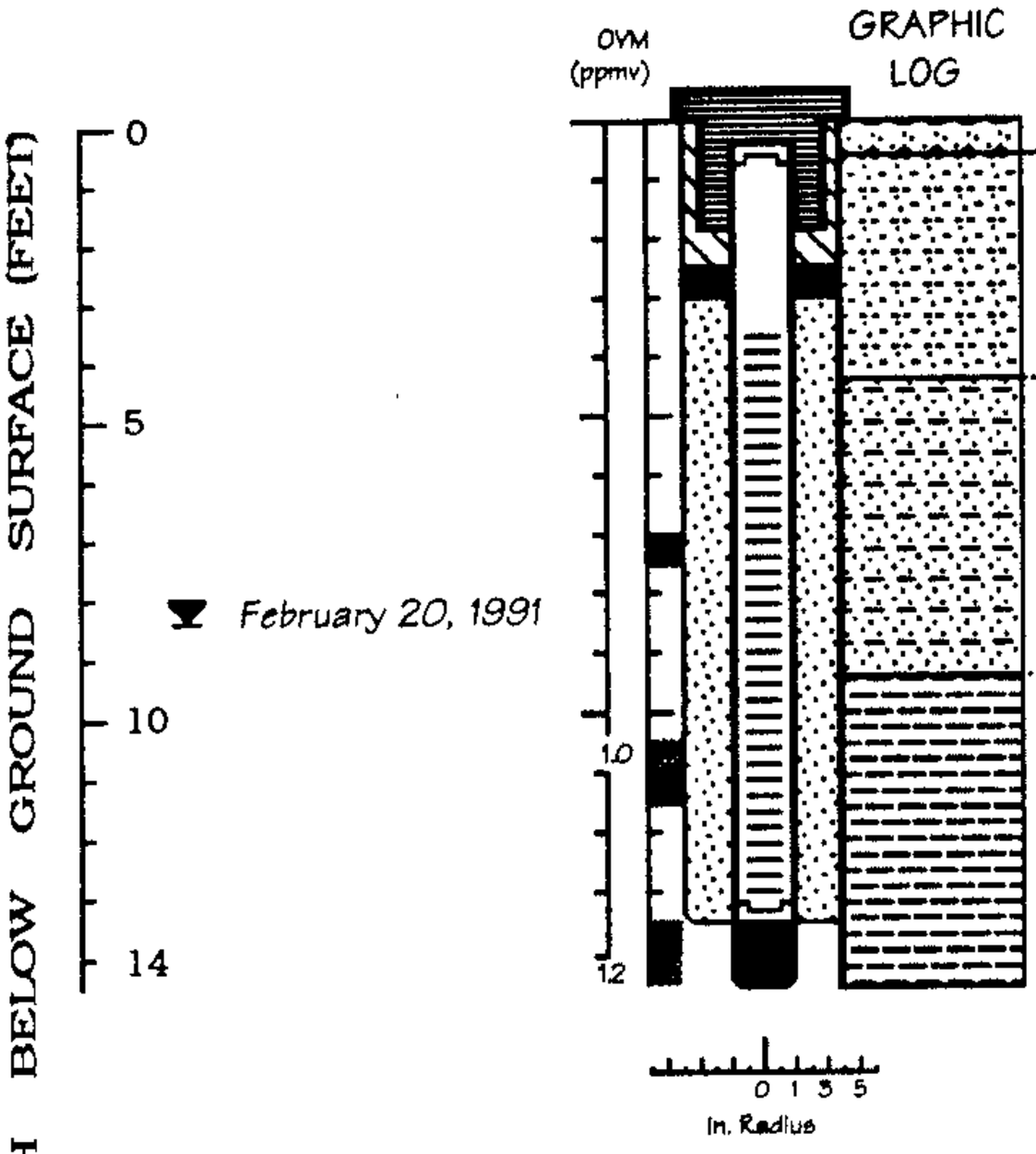
Redwood Oil Service Station #116,
5 Ashford Avenue,
Mill Valley, California

Logged by:	John Trigg
Supervisor:	R. Greenefelder RG#003011
Drilling Company:	Soils Exploration Services
Driller:	Russ Ellis
C57#:	582696
Drilling Method:	Hollow stem auger
Date Drilled:	February 4, 1991
Well Head Completion:	Locking cap & traffic-rated vault
Type of sampler:	Split barrel (2" ID)



WELL MW-6

SIERRA



DESCRIPTION

8" Asphalt

Silty SAND (SM): light brown; damp to moist; 20-30% silt; very fine to fine sand; moderate est K

Sandy CLAY (CL): greenish brown; damp to wet; very soft; 0-5% silt; 5-10% very fine to fine sand; low est K

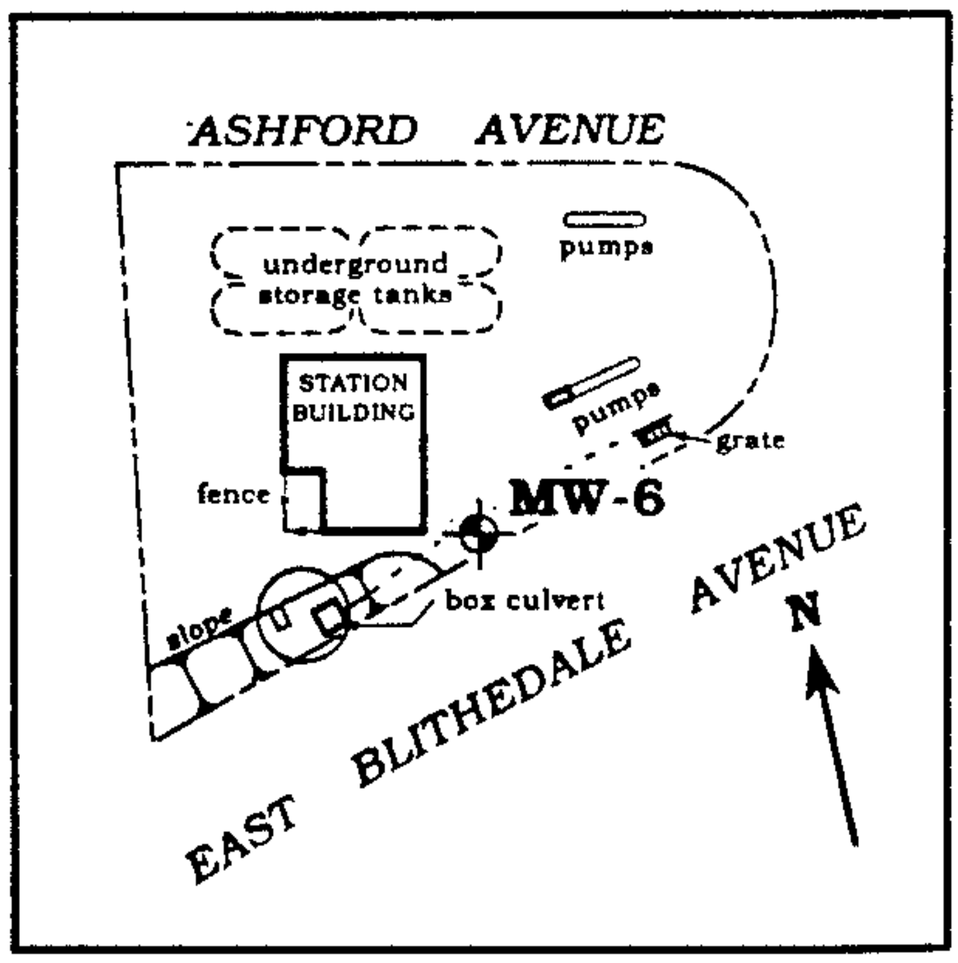
CLAY (CH): gray-green; wet; very soft; 0-5% silt; low est K; strong organic/sulphurous odor

BOH 14.5'
Note: Free ground water was not encountered on date of drilling.

Well Construction and Boring Log - Well MW-6

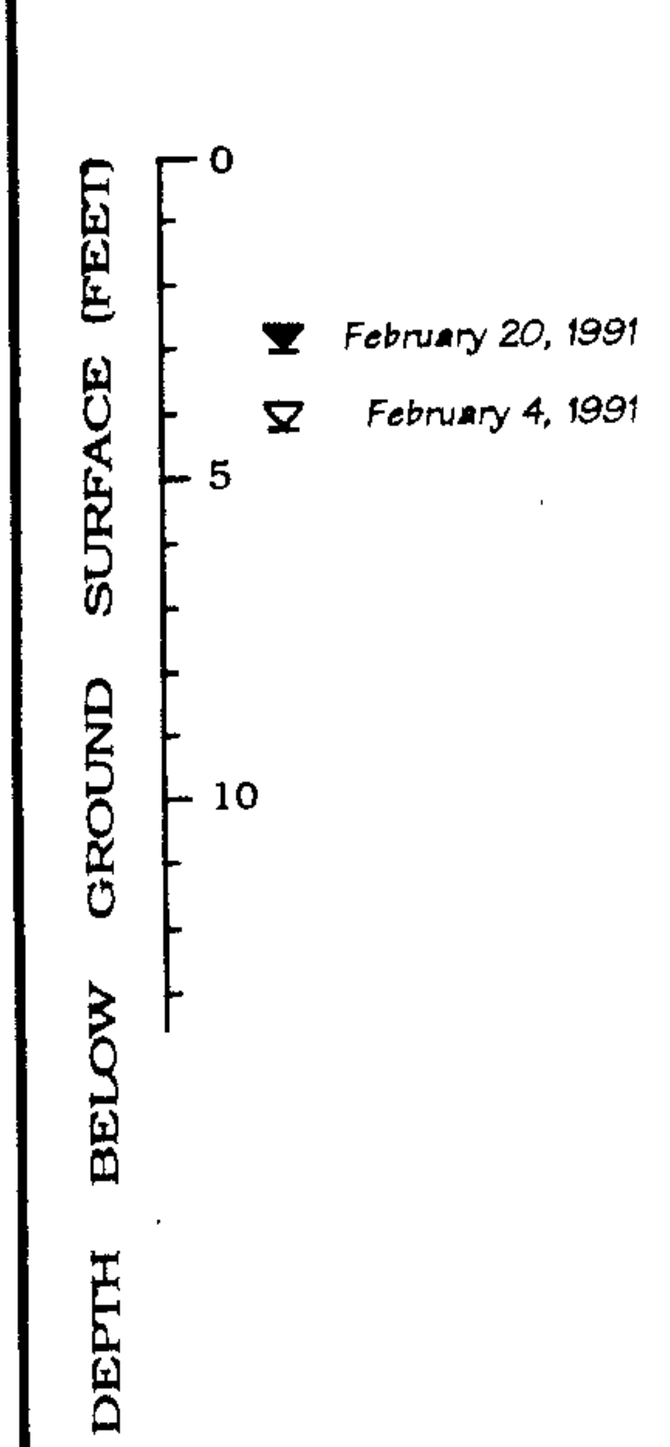
Redwood Oil Service Station #116
5 Ashford Avenue,
Mill Valley, California

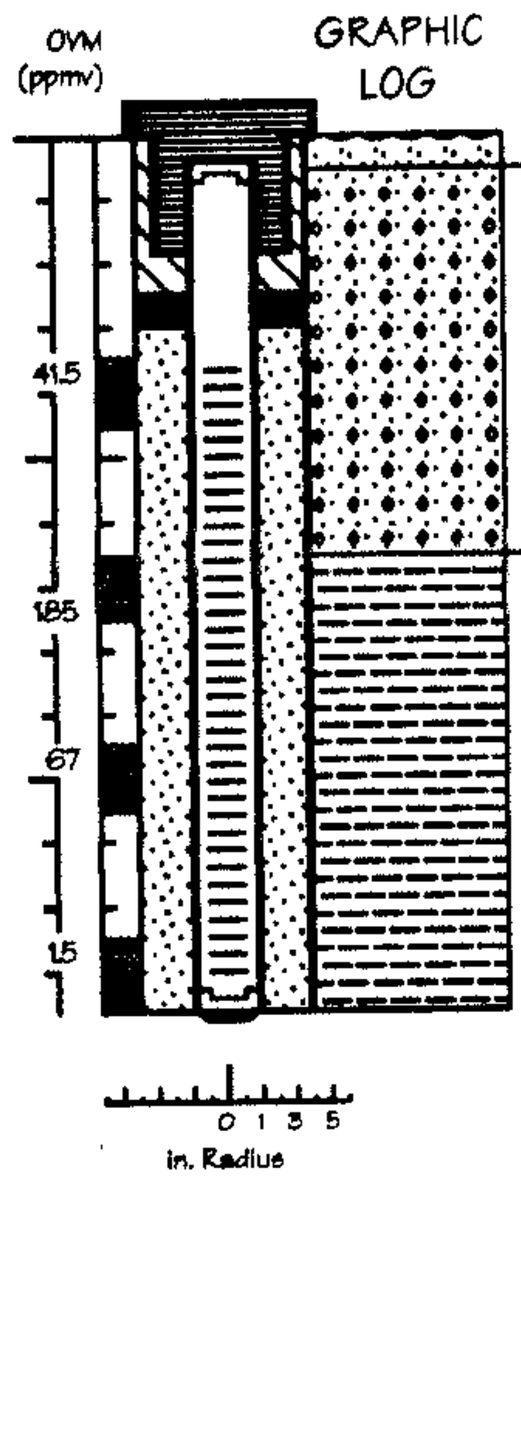
Logged by:	John Trigg
Supervisor:	R. Greenefelder RG#003011
Drilling Company:	Soils Exploration Services
Driller:	Russ Ellis
C57#:	582596
Drilling Method:	Hollow stem auger
Date Drilled:	February 7, 1991
Well Head Completion:	Locking cap & traffic-rated vault
Type of sampler:	Split barrel (2" ID)



WELL MW-7

SIERRA





DESCRIPTION

6" Asphalt

Gravelly SAND (SP): gray-green; moist; loose; 5-10% gravel to 1" diameter; very fine to fine sand; high est K; strong hydrocarbon odor

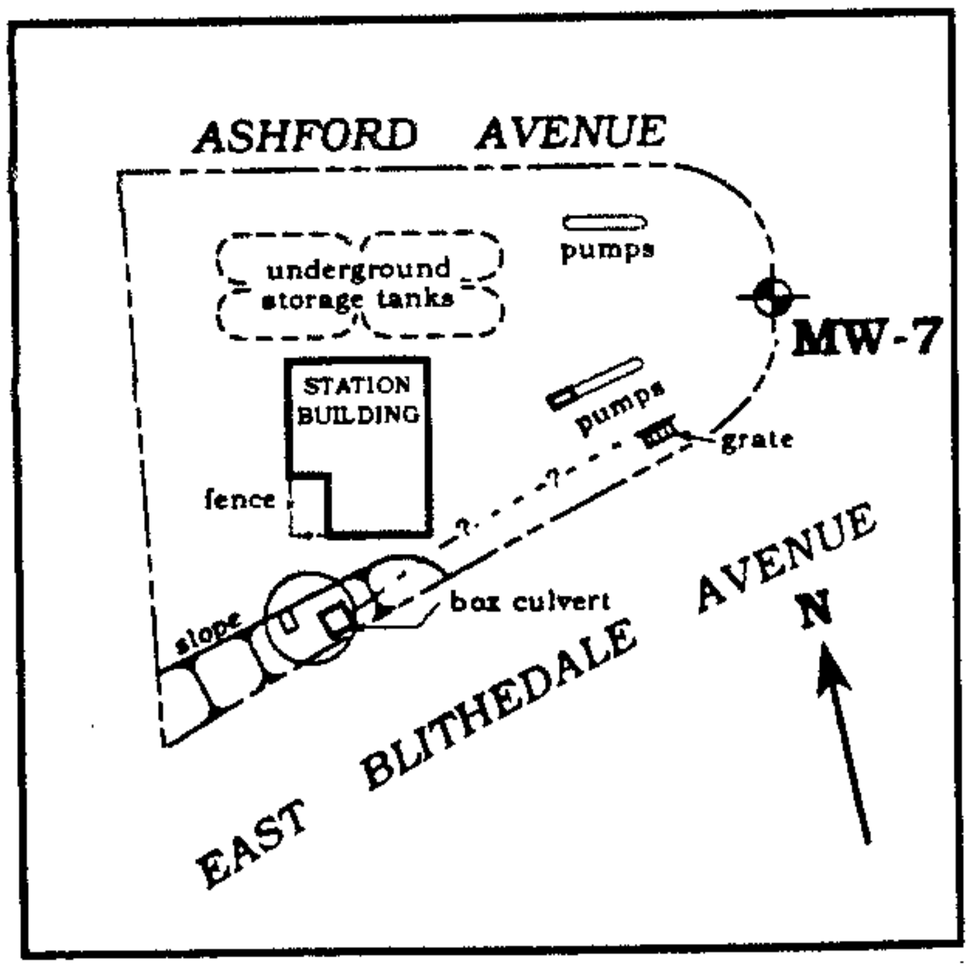
CLAY (OH): gray-green; damp to moist; soft; low est K; low to moderate hydrocarbon odor; organics and peat
Grades less organic at 10'

BOH at 13.5'

Well Construction and Boring Log - Well MW-7

Redwood Oil Service Station #116
5 Ashford Avenue,
Mill Valley, California

Logged by:	John Trigg
Supervisor:	R. Greenefelder RG#003011
Drilling Company:	Solle Exploration Services
C57#:	582696
Driller:	Russ Ellis
Drilling Method:	Hollow stem auger
Date Drilled:	February 4, 1991
Well Head Completion:	Locking cap & traffic-rated vault
Type of sampler:	Split barrel (2" ID)



c:\azuresdwg\ltyplog

LITHOLOGY | SAMPLE DATA

Well/Boring No.: MW-7R

Depth (feet)	Graphic Log	Description	Sample No. and Interval	Penatration Rate (blows/ft.)
		Ashalt 6"		
5	ML	silt clay - dark greenish gray (5Y 5/1), moist, med plasticity, very fine sands		0.0
		wet		0.0
10			No Recov	
15	ML	wet		0.0
		TD 15'		
20		* no water @ 4 PM		
25		* 2" PVC		
		* Slot 0.01		
		* Sand 2/16		
30		* Screen 8' to 15'		
35				

Explanation:

Clay	Silt	Sand	Gravel
▨	▨	▨	▨

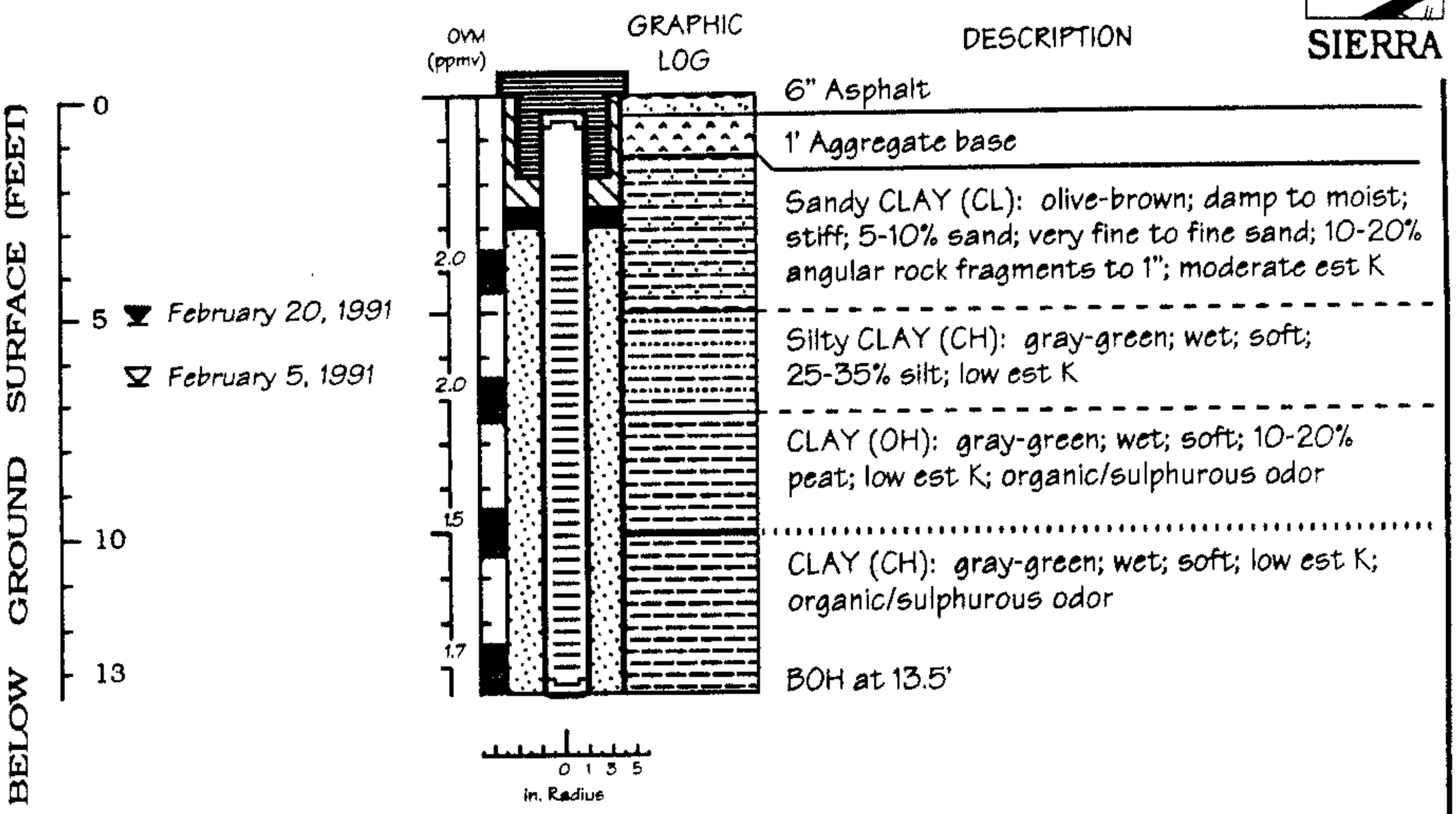
Drilling Method: Auger
Sampling Method: push
Drilling company: Gregg
Drillers: Paul

Permit No.:
Geologist: Benwell

ENVIRONMENTAL R.G	Figure: Soil Boring Lithology and Sample Data
Project No.	Date: 11/11/02
Project Name: 5 Alf	Page 1 of 1

WELL MW-8

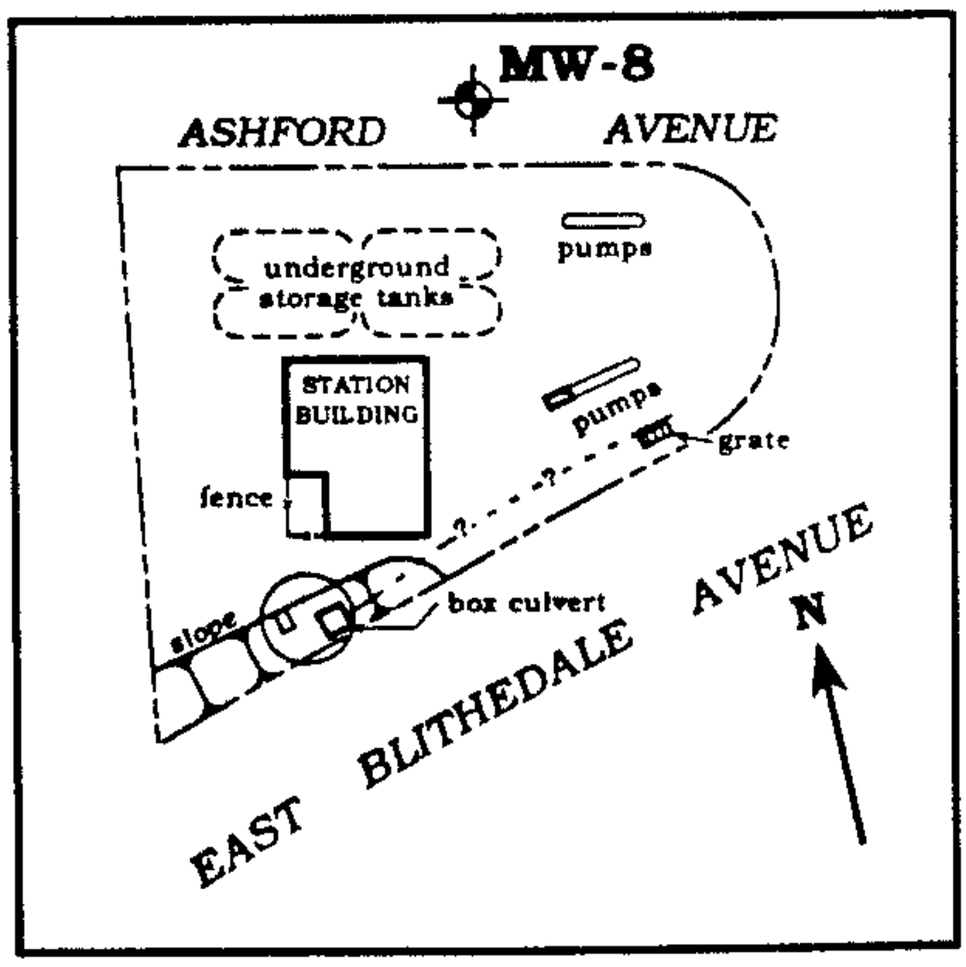
SIERRA



Well Construction and Boring Log - Well MW-8

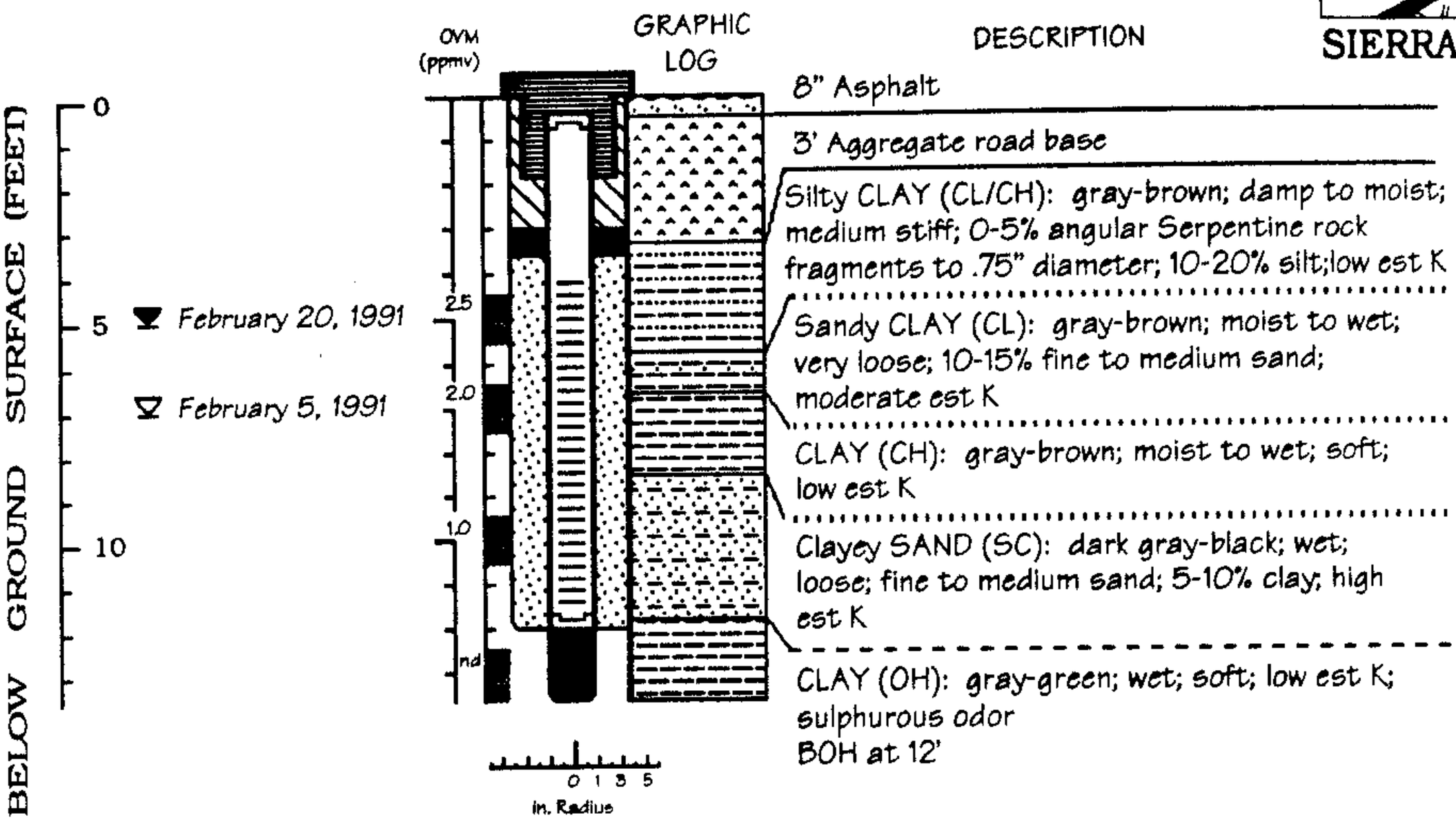
Redwood Oil Service Station #116
5 Ashford Avenue,
Mill Valley, California

Logged by:	John Trigg
Supervisor:	R. Greenefelder RG#003011
Drilling Company:	Soils Exploration Services
Driller:	Russ Ellis
C57#:	582696
Drilling Method:	Hollow stem auger
Date Drilled:	February 5, 1991
Well Head Completion:	Locking cap & traffic-rated vault
Type of sampler:	Split barrel (2" ID)



WELL MW-9

SIERRA



Well Construction and Boring Log - Well MW-9

Redwood Oil Service Station #116,
5 Ashford Avenue,
Mill Valley, California

Logged by:	John Trigg
Supervisor:	R. Greenefelder RG#003011
Drilling Company:	Soils Exploration Services
Driller:	Russ Ellis
C57#:	582696
Drilling Method:	Hollow stem auger
Date Drilled:	February 5, 1991
Well Head Completion:	Locking cap & traffic-rated vault
Type of sampler:	Split barrel (2" ID)